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Shadows and Straws

NO MORE deserving tribute has ever been paid to an architect than that which Mr. Walter Stabler, Comptroller of the Metropolitan Life Insurance Company bestowed upon Mr. Andrew J. Thomas, when, speaking recently at a meeting of the Woman's Municipal League in reference to the housing situation, he said:

"What are we going to do to relieve that terrible situation? The only thing that can be done, in my opinion, is to build new houses where the ground is cheaper, and build them on the plan that Mr. Ackerman has so interestingly shown us. Don't aim to cover the full percentage of the ground permitted by the present tenement house law, but, as we express it, 'throw away some of the ground,' throw it away for two reasons: first, because of the good that will come to the people who will live in those houses,—they will have more room, more sunlight, more ventilation, they will be better off in every respect than they would be in the old houses; and second, in the interest of the investors in these houses, and those who lend money on such houses. My practice in examining plans for new tenement houses is to insist upon it that some of the ground be thrown away, that we put less building on the lot, for the reason that as time goes on and pressure for housing is diminished, those houses that are best planned, those that have the best light and ventilation, are the houses that will always hold their tenants—possibly even at the expense of those houses that are more badly planned.

"Mr. Ackerman has referred to Mr. Thomas—Andrew J. Thomas—an architect, and I say to you that no man has struggled more unselfishly and more capably to solve this problem than Andrew J. Thomas. (Applause.) In my opinion, he deserves a place in the Hall of Fame, because he was distinctly far in advance of anybody else in this field. He had the courage to do what I have said—"throw away the ground.' He has taught us all, even those who thought we knew a great deal about it. I might even say that he has taught us that we did not know anything about it, from the angle which I have been presenting. He has opened our eyes to something that will be, as years go on, of more benefit to the people of New York than any one thing that has ever been done in housing—more benefit than can come from the work of the Tenement House Department, and I hope that Mr. Thomas will sometime derive material benefit from it, for he has not done so up to this time; he has been unselfishly giving his time and strength to exploiting this idea of his which means so much to the people of the City of New York."

Incidentally, the JOURNAL takes some pride in the fact that in presenting a point of view on housing which was about as popular as a mouse at a dinner party, it has been able to change the current attitude to a considerable degree and to persuade many of its readers that certain fundamental aspects will have to be studied ere we know where we are and what to do,—and that a Tenement House Law is one of the worst iniquities ever offered as a remedy for conditions which we now know to have been merely the forerunners of problems steadily becoming graver.

"YOU'RE ALL WRONG on the question of Registration," said a member of the Institute recently. He was commenting on our statement in the last issue regarding the Knickerbocker Theatre disaster and the need for a further extension of the principle of registration. "What we need," said he, "is a rigid building code providing for structural safety. Then let anyone build who wills. We might get some real architecture that way, and make some real architects. But we shall do neither of those things with registration laws."

Amen, say we, for the sake of argument, provided we may observe that we shall never accomplish anything by making laws. The further we go in that direction the more lamentable will be our end. Every stroke of a legislative pen is another lesion in the moral fibre of the nation. Steadily we proceed on the theory of crime and punishment. And the registration of architects is nothing more than an effort to swim with the tide, because we simply do not know how to stem it. Yet every effort to substitute the fear of the law for the motive of personal righteousness is no more than a heightening of the tide that will wash everything away.

We ought to recognize that when we discuss any legal enactment designed to make people act differently. We ought to explore the dark caverns of our mind and begin to realize that something very fundamental must be the matter when we are continually being stampeded from one law to another. Laws do not change motives, nor do they curb them to any

appreciable degree. What is the motive which leads men to be willing to care nothing for human life if only they can succeed with their enterprise? The answer ought to be easy, but who can tell us how to find a remedy?

Registration laws will not make architects, nor produce great architecture. But that is not the aim which we seek as a nation. Another aim takes first place, and in its pursuit we find men willing to jeopardize life to any degree so long as they are left free to gain profits. All our laws are aimed either to prevent them from making an unjust profit or from gaining what we prescribe as a "legitimate profit" through the sacrifice of human life and needs. A national building code absolutely enforced might be a better answer to our problem, but experience teaches us that we are totally incapable under our political system of enforcing any such law, even if the cost of it could be borne by the consumers of buildings. In the race to thwart men by threatening them with law, registration seems the best gesture that architects can make. It is a feeble one, but that is not their fault, except as they are a part of the collectivity upon which the fault rests.

THE DECISION of the Supreme Court sustaining the right of the State of New York to fix rents for housing property will give rise to many emotions. Those who believe that the law will some day make men good will dilate upon the sweeping character of a decision that puts the rights of property in a secondary place, although it must be remembered that the Court sustains that position merely in the face of what it calls a grave social emergency. But the apostles of law will thus acclaim the decision the more, for they will point out that if the Supreme Court will recognize such a mundane thing as a "grave social emergency," it may very likely be inclined, as time goes on, to envisage many other permanent conditions which bear on humans quite as sorely as a housing shortage. Deliberate price-fixing, for example; deliberate sabotage, by which the necessaries of life are held out of the market in order to raise their price. And yet, the Government has but recently granted a charter to farmers' co-operatives, under which price-raising will very likely come to be the main objective.

But then, what of the fact that in fixing rents, all encouragement to speculative building is destroyed in a land which has put its entire faith in speculative building as the method of providing sufficient structures that could be passed off as houses? Here the authorities intervene again and in order to undo the evils of rent-fixing they exempt new houses from taxation. This means that the owners of old houses have their profits fixed and that they must also bear the increase in taxation caused by the growth of parts of the city where houses are exempt. Could anything be more unjust? The highest court of the State of New Jersey has invalidated the tax exemption laws of that state on the plain ground of their unconstitutionality. Very likely, on the grounds of a "grave social emergency," the Supreme Court of the United States may reverse the decision. But none of these things will produce decent houses, and if any citizen of the United States can make head or tail out of the legal spree in which the legislatures and the courts are indulging, we would be thankful for light. Looking backward as far as the first tenement house competition in New York, an account of which appears elsewhere in this issue, the need for light seems to be something resembling what Mr. Stabler calls a "terrible situation."

What folly, for example, we must now acknowledge as we look back at the housing competition of 1879, illustrated further on. Fancy having the seal of architecture placed upon windowless rooms and upon the diabolical Tenement House Law that legalized the human squeezing now seen to be no more than the coalition of greed and stupidity. And done in the name of "Light, Air and Health," and "Ut Prosim"!

APPRENTICESHIP, a factor in the building industry to which our attention is being forced by the steadily declining number of skilled workers, is the subject of a very promising program inaugurated in New York City, under the auspices of the Congress of the Building Industry and described in this number by Mr. Burt L. Fenner who is the chairman of the general committee entrusted with the program. The movement is significant indeed of the larger part being played by architects in the pressing problems that beset the industry everywhere, and eloquently does it indicate that growing appreciation of a solidarity of interest upon which we must depend ever more and more.

CITY PLANNING students will be impressed with Mr. Adams's opportune statement on the qualifications that make for a real planner of cities, and the necessity for developing here, as in all other problems, that same solidarity of interest to which we have just alluded. Particularly does he impress upon us the futility of attempting to apply zoning laws except as they are secondary to an adopted plan which envisages not only present problems but future ones as well. The advocates of zoning, as a measure to be applied by itself, have already done immeasurable harm. In many cases they have apparently done no more than to fix existing conditions as standards. Planning has to come first, and on a scale that will grow larger and larger. If we fail to appreciate scale in the future, as we have done so completely in the past, we shall have no right to be considered as even passably intelligent. At present, a stranger from some far corner of the universe, might well assume that we were a race of lunatics, if he examined any one of our large cities. We dare to imagine, of course, that they must manage these things better in Aldebaran. C. H. W.

Architects and Landscape Architects as Town Planners

By THOMAS ADAMS

THE appointment of a special visiting committee of the School of Landscape Architecture at Harvard may lead to interesting developments in connection with the teaching of town planning which, in Massachusetts, includes city planning. The appointment of the committee should promote further co-operation between the schools of architecture and landscape architecture rather than tend to create any line of cleavage between them. That is agred to be highly desirable. Both the architect and the landscape architect who intend to specialize in town planning need a higher degree of training in the principles and methods of civic design and more understanding of the reciprocal relations of all the factors in city and town development. The landscape architect *per se* is no more a town planner than the architect, or the architect than the engineer—and no member of any of the three professions has a claim to be a town planner in a more comprehensive sense than the other.

A member of each profession has the knowledge and qualifications needed as a foundation for making the town planner, but specialized training is needed to be superimposed upon that foundation to make either the architect town planner, the landscape architect town planner or the engineer town planner. The relative degree of importance of either in town planning will be a matter of personality. Until recently the field of modern town planning in America has appeared to be the specialty of the landscape architect, and no one will question the fact that some distinguished landscape men have given reality to any special claims their group may have appeared to have for the cultivation of that field. Moreover, in Harvard and elsewhere, special teaching in phases of town planning to landscape students has given further stability to these claims. Similar teaching has not been given, or at any rate, to anything like the same extent, to architects and engineers.

Dominance of the Landscape Architect

Apart from these facts, and the zeal of the landscape architect in connection with the meetings of the National City Planning Conference, there is no logical reason for giving the landscape architect any special claims to practice as a town planner. The fact that he deals in landscape design, thinks more of topography in relation to buildings, and is more concerned with the natural settings, scenic beauty and outdoor recreational facilities of the city or town, is not a reason for any dominance he may have over the architect, trained in expressing himself in the design, composition and arrangement of buildings, or the engineer whose special knowledge and experience give him the best claim to advise on transportation problems, street systems in relation to traffic, or sewerage problems. Such dominance as the former may have will be due to specialized training over and above his landscape training and to personality. That he has sought to obtain and has obtained some dominance in the past does not make him blameworthy. It is rather the absence of zeal to pursue the same field by the architect and engineer that places them open to blame. Generally speaking this appears to be so—in spite of the exceptions.

This needs to be said because there is a natural, but in the circumstances an unreasonable, feeling on the part of some architects and engineers that the landscape man has given himself an importance in town planning that does not belong to his profession.

The adjustment of the balance between the professions in this regard is to be found in broadening the education and strengthening the experience of the architect and engineer rather than in undermining the position of the landscape architect. As town planning grows in importance it will be found necessary for schemes to be prepared by groups representing all three professions. No one man can make a satisfactory plan of a city or town and where he attempts to do so his skill in one direction will be offset by his failure to apply skill in another direction.

What Is a Town Planner?

The successful town planner is the man belonging to one of the above three professions who has the power of bringing together and co-ordinating his own technical skill and that of colleagues of the other two professions. That man may be an architect, a landscape architect or an engineer. Christopher Wren and Evelyn should have combined to replan London in 1666 rather than have prepared separate plans. L'Enfant should not have acted alone in Washington. When the time came to reconsider the Washington plan, two architects and a landscape architect were appointed as the commission. Olmsted's contribution to the World's Fair was perhaps as great as Burnham's, but Burnham was the organizer. He was also the organizer of the Chicago plan but was not indifferent to the contribution of others.

Haussmann was merely an organizer. The commission appointed to plan Delhi comprised an administrator, an architect, and an engineer, with the administra-

tor as chairman. The architect (Sir Edwin Lutyens) was the dominant personality in this case and remains so. It would have been better in this case if a landscape architect had acted in place of the administrator, with the architect as chairman.

Notwithstanding the enormous amount of good work accomplished by landscape architects in the field of town planning in recent years they have still to find the opportunity to achieve anything as great as has been achieved by the architects who have been given the opportunity. When their day comes success will depend on co-operative action with the other professions.

The U. S. Housing Schemes

During the war the housing schemes of the United States Housing Corporation and the Shipping Board were planned by groups usually of three persons designated as the town planner, the architect and the engineer. The designation should have been the architect, the landscape architect and the engineer, and in such schemes the architect, other things being equal, should be the chief executive. The work under these boards was, in the main, "site" planning rather than town planning and in site planning the chief responsibility for success depends on the work of the architect. The best plan of a site prepared by a landscape architect may be spoiled by unsympathetic or bad treatment of the buildings, just as the worst site plan may be redeemed by good building design and arrangement. The controlling factor in the composition of a local building scheme is the structural development, although the landscape and engineering treatment are each of great importance.

Different Problems Need Different Men

Apart from personality which will always count in sorting out a leader among a group of men entrusted with the solution of a specific problem, there is the obvious distinction created among such a group by reason of the precise nature of the task. For instance: Is the chief problem a civic center, or a group of university buildings, or a colony of dwellings? Then should not the architect be the town planner subject to the aid of the landscape architect and engineer? Is it a park system, or the general planning of a town or region in which the park system is a prominent feature? Then is it not the landscape architect who should be dominant? Is it limited to an arterial system of highways or a street plan to facilitate traffic circulation, or a plan to fit in with the peculiar needs of a district as regards drainage? Then is it not the engineer who should be in charge?

Of course no city should be studied and planned in separate compartments. It should be dealt with comprehensively both as to area and function. In the preparation of a comprehensive plan the landscape architect may by reason of greater experience be the one to give general leadership, but he will naturally fail in his responsibility if he tries to maintain that leadership in connection with those phases of the plan that are architectural or engineering in their character.

The Field of Zoning

As has been said before, zoning is an incident in the town plan and so far as it is being treated separately from the general plan, prepared in collaboration with the architect and the engineer, it is likely to end in futility as a means of securing proper development of a city or town. The popularity of zoning at the present time will lead to unfortunate results if it is going to end in limiting town planning to the negative form of dealing with use, height and density of buildings, without studied relation of these things to transportation, street and park systems and numerous architectural and engineering problems which together constitute the field for the exercise of the art of the town planner. It will be unfortunate to the town planning movement as it will make it a materialistic, deadening thing solely concerned with "stabilizing real estate values." It will also be unfortunate to the profession of town planning. What art is needed to create zones for various uses and purposes without regard to all the other reciprocal factors in town development? One need not question the great social value of the zoning that has been done in spite of the materialistic basis on which it is conceived in most cases, by expressing a sense of danger which all interested in town planning as an art and science must feel. Nor need one ignore the fact that some good indirect results have been obtained as in the case of the opportunity given for better treatment of the elevations of high buildings in New York. The success thus obtained has been due to the architect who took advantage of the opportunity and zoning has been of enormous value in that respect.

It is not the architect or the landscape architect or the engineer, however, who is the technical authority to control the preparation of schemes that are limited to zoning. That is the function of the lawyer and the statistician. They it is who are the dominant figures in zoning, although men of other professions may specialize in it and attain the necessary legal knowledge. And here it may be admitted, with generous recognition of the great value of lawyers in all phases of town planning, that there is a fourth estate in the town planning profession. In zoning especially the members of that estate must maintain leadership, because the character, scope and limitations of zoning under the law belong primarily to the field of the lawyer. Such leadership as may have been given in preparing zoning regulations and plans by those who are not lawyers, does not mean that they can long maintain that leadership. As time goes on the lawyer will be the controlling personality, as he now is in New York. Every change and every complexity that arises as a result of

change, will entrench the lawyer as the supreme "Zonist." But when zoning is kept in its proper place as a part of the town plan, we shall have the co-operation of the lawyer as a member of the town planning group, but not the subordination of the artist or the engineer to the legal adviser.

It is not too much to say that the future of city and town planning depends on the provision of specialized training and the opening up of opportunities for experience, for all four professions that have been alluded to. The high place that the architect must take in all forms of civic design and his essential leadership in some forms, demands that more attention be given to the study of city and town planning in the Schools of Architecture. That leads to the discussion of a matter which must be left for another article.

To a Certain Contemptuous Architect

By CHARLES HARRIS WHITAKER

QUITE recently, a well known manufacturer asked an architect of some prominence for his opinion of advertising to architects. "I don't believe that any of it is worth a damn," was the reply.

Almost at the same moment a citizen of some note asked a manufacturer why the Knickerbocker Theater roof collapsed. "Another one of those damned architects," was the answer.

Now both of these episodes illustrate that loose generalization of minds which either do not work at all or which work in the fixed grooves of blind conservatism. I can well understand such an accumulation of irritation as would lead many building owners to express their disgust with architects just as I can understand why many architects, disgusted with that glib spewing of copy hacks which insults their intelligence, give vent to their feelings about advertising. But this disgust, in both cases, merely proves the existence of incompetence and nothing more. Architects will continue to practise and will either justify their existence by their ability or they will be replaced. Advertising will continue to be done because it is a function with which we cannot at present dispense. But cocksure architects and grouchy manufacturers will have to do more thinking and less damning.

Now it is precisely that very significance which attaches to the *Proceedings of the Joint Conference for Better Advertising to Architects*. They are published as a Supplement to this issue of the JOURNAL and are being distributed as generally in the building industry as the resources at the command of the Joint Committee will permit.

They mark another important step, in one particular field, of a movement to use thought instead of damns, —to put an end to the vast waste now engendered in the blind struggle to gain business,—to bring architects and manufacturers nearer together in a more intelligent understanding—and finally, to lay the piers and footings for some kind of a structure upon which the consumers of building materials may rely for sound and dependable information.

The Folly of Contempt

To those architects who have a contempt for all advertising,—for there are others beside the one I am addressing,—let me call their attention to Mr. Harn's striking observation in the Proceedings to which I refer, that the sale of an article is equally as important to the buyer as to the seller. Indeed, is it not much more so? What Mr. Harn sees very clearly, however, is that the buyer of building materials has more at stake than the seller. He will perhaps have to live in the building or do business in it; or he may rent it and thus have to bear the cost of upkeep and repairs, in which case he is dependent upon it for an income, or even a livelihood.

(Unfortunately, in that class of building called speculative, the original buyer of materials has very little or no interest in the quality of work or materials used; the social loss resulting from this condition and the damage done to the building industry in the constant and inevitable forcing down, ever down,—of standards of work and materials used is colossal.)

What Every Architect Knows

But my friend the architect knows these things by experience. He knows that he has been too often misled, that he has made many mistakes because he lacked information— that he has used materials which, proven to be right for one purpose, soon showed that they were not right for another,—and that, far too often, he has had to depend upon scanty or even no information,—but upon his unfortified judgment,—as a guide to his choice. He knows,—and knows very well,—of the high cost of maintenance and repairs that result from all of these factors, and it is therefore just as stupid for him to express his contempt for advertising as it was for a manufacturer to express his contempt for architects.

Substitute the word "Information" for "Advertising," and most of the contempt would vanish. The architect would pretty generally admit his need for

information, and just as fast as he could be assured of its dependability, he would resort to it with avidity.

Where It Began

The beginnings of the present energetic movement to make advertising more useful to architects rest with the Structural Service Department of the JOURNAL OF THE AMERICAN INSTITUTE OF ARCHITECTS. They go back to 1915, when Mr. D. Knickerbocker Boyd and the Editor of the JOURNAL laid the plans for organizing a source of dependable information for architects. Three years later the work was further extended and placed in the hands of the Committee on Structural Service of the A. I. A. Its work has now attained to proportions of which the building industry is all too uninformed. But, in the prosecucution of its work, the Committee on Structural Service came into instant and intimate contact with the whole subject of advertising, and out of that contact and the accompanying experience there finally emerged the Joint Conference of which we write, and the proceedings which are now before the reader.

Where It Seems Headed

What is the outstanding aspect of that conference? The very evident idea of establishing, by means which are now the subject of study by the Continuing Committee, a Research Bureau which shall correspond in its functions and its independence to that established by the New Jersey Chamber of Commerce. A Bureau which cannot be coerced or intimidated by any branch of the building industry, but which shall discharge a scientifically dispassionate function in the interest of the users and consumers of building materials,—because it is only by putting that interest first, —ahead of all others,—that such a Bureau could render any permanent service to those who gain their livelihood in producing or assembling the materials that go into a building.

Restoring Public Confidence

What the building industry needs more than all else is to regain Public Confidence. It needs to demonstrate that buildings, as supplying one of the prime needs of man, can be so built as to be within the present economic requirements of the investment, and its research in this direction will ultimately take it into such fields as those of taxation, use of credit, control of land, and all that group of factors which are now having their evident repercussion everywhere. But, as a beginning, it must learn to know itself as a whole, just as the Congress of the Building Industry in New York, for example, has begun to know itself locally and to give evidence of that broader knowledge by issuing its *Code of Ethics for the Building Industry*.

What does all this mean specifically to architects, advertisers and manufacturers? It means that by the operation of the inexorable law of progress, or change, or evolution,—for we live in a dynamic world in spite of all our effort to keep it merely static,—they will have to survey their machinery and equipment anew. They will have to take account of stock. They will have to examine the function of advertising, for example—as one which, even in its dual capacity of giving information and exciting desire, must be based upon a sincere effort to know and tell the truth.

Incompetent Architects

Is it not incompetence which heads the building industry's problems? There is architectural incompetence to begin with,—largely due to the fact that the practice of architecture in the United States has been free to all,—an incompetence encouraged by the flattering attentions bestowed upon the thousands of pseudo-architects by various interests,—an incompetence fostered by the weakness of those architects who sell their services at less than cost,—an incompetence manifested in a hundred ways too well known to require description—an incompetence too little discouraged by methods of education, and too greatly stimulated by the ability to borrow elements of plan and design from the far too numerous sources available and thus, leaning upon a contractor who fawns, or a manufacturer who makes plans (always in collusion against the interest of the owner), to avoid the acquisition of competence by that sweat of the brow which alone leads to its possession. (Note that in New York State alone, during 1921, some 500 so-called architects were denied registration through failure to pass the test for competency prescribed by law.) Then there is that incompetence born of studied aloofness on the part of a small section of the profession which boasts a pride in its splendid isolation, craves exemption from the social obligations of the common herd, and looks down from its esthetic heights in plain contempt upon those who seek, for instance, to deal with those problems which, until they are dealt with, keep architecture well out of its heritage.

Incompetent Advertisers

In advertising there is far too much incompetence, —from beginning to end. There is the incompetence of the man who does not know the truth about his own product,—of the man who knows nothing of architects and their ways and who makes the fatal mistake of regarding them as consumers when they are really trustees,—of the man who has no background in the building industry itself and who is forever at sea as he tries to fathom it,—of the man who is continually spending his money to produce more incompetence

by scattering his publicity and his offers of free service where they seem to bring a quick and easy response, —of the man who coddles the thousands of fake architects in the United States because he is too lazy or too dull or has too poor a product to find his way into the offices of the competent,—of the man who seeks to break down what he calls the opposition of the architect by appealing to the public, forgetting, as he does, that with all its failings and all its incompetence, the architectural profession is the one safeguard of the manufacturer who makes good materials commanding a higher price; (once the sale of building materials is brought to a point where the client buys, price alone will be the determining factor, and then what?) and, then, by the incompetence of those advertising agents who, working on a basis which cannot offer adequate remuneration for intelligent service, buy space on circulation, line rates, inquiries produced, and the general hard and fast rules which are absolutely inapplicable as related to competent architects and worthy materials, —and then, there is the amusing, but pathetic incompetence of those advertisers and advertising agents who seek by insinuation and innuendo to get a reading notice, a "puff," or any sort of free publicity,—either as the price of an advertising contract or as the bait for one,—trying thus to destroy the only factor that can make any journal a worth while medium. And last of all there is that colossal and collective incompetence which exaggerates and overstates, insults the intelligence of every practised architect and thus creates and fosters and increases that condition which causes the high cost and low efficiency of advertising, —the distrust engendered by its abuse and misuse.

This incompetence in advertising could be no better illustrated than by the experiences of the Structural Service Department, when, for example, on applying to several advertisers for information as to a certain product, advertised and made by all and substantially uniform in character, replies were received absolutely at variance one with another, indicating that not one of the advertisers knew the answer scientifically, or that, if he did, he would not tell it. Where could my friend the contemptuous architect get his information in such a case?

Incompetent Manufacturers

Then, is there not a general incompetence of American manufacturers, engendered no doubt, by the very ease with which one can enter business and by the facility with which our abnormal growth has made it possible to support the terrific waste of our industrial establishment. We do not economically utilize our productive machinery,—a fifth of what we have would give us all that we are at present consuming, but having played for the bigness of things rather than for soundness and stability,—we now find that the era of waste which resulted from that game has come to a halt,—very likely to an end.

What is the next step?

Facts,—that's all,—facts made the basis for working out the problems not alone of the building industry or of American industry, but of the United States of America as an experiment in government,—for it is still an experiment, however great our faith in it may be. In that experiment the building industry is a vital factor, for it deals with the indispensable element known as shelter, of which we have far too little in quantity, and far too poor a quality.

The Fear of the Shadow

These are the plain facts, even though they be stated in general terms. Their meaning is that the building industry must examine itself, in all parts, and without being afraid of its own shadow. It is suggested as a beginning, that you read the Proceedings of the Joint Conference, and that you think about what was done and what remains to be done,—and I offer this suggestion particularly to all contemptuous architects.

Obsolescence in Buildings

The Federal Income Tax Law allows deductions for obsolescence in the case of office buildings, and the National Association of Building Owners and Managers has issued a preliminary circular on the subject. As the questions involved will demand more consideration than they have ever before received in the history of building for investment, architects will give eager attention to the statements of the association. These are no more than tentative conclusions, at present, since an inquiry is being conducted to determine their validity, but they all strike most people acquainted with investment building as being not difficult to substantiate.

"Obsolescence," says the circular, "may be considered from two standpoints. First, its causes, and second, its effects." Some of the causes of obsolescence in an office building are as follows:

"1. The erection of new buildings of a different type and style that are better equipped than the old buildings. An office building gives its tenants several things of great value beyond the mere space which they occupy. First of all it gives them a certain amount of advertising, which is dependent upon the size, character, reputation and publicity of the building. One of the greatest elements contributing to the publicity value of a building is its newness. This value lives, of course, but a few years and is immediately destroyed upon the erection of newer buildings. The element of size also has a distinct advertising value, so that tenants prefer to be in the largest building in the city if possible. This factor of advertising is something that every tenant recognizes by a willingness to pay a higher rental to secure space in a building that will give it to him than he would pay in other buildings equally as good physically, but lacking in publicity.

"2. Service is another value which an office building offers to its tenants. This consists not only of a good quality

of ordinary services, such as cleaning, heating, elevator service, etc., but also of many additional services, such as towel supply, ice and water, clock service, restaurant and club service, etc. These extra services are continually being added to, and each new building that is erected endeavors to feature some new form of service which helps to attract tenants from other buildings. The older buildings, in order to meet this competition, must adopt these extra service features, often at considerable investment expense.

"3. The newer buildings are also usually planned with a greater efficiency of layout that benefits both the tenant and the building. The tenant, because it gives him a better office, and the building, because it obtains a greater number of rentable square feet per $1,000.00 of investment. A new and more efficiently designed building can therefore not only attract tenants, but being more efficiently designed, can operate its space at less cost and rent it more cheaply than the older buildings. The older buildings are thus forced, in many cases, to reduce their rents to hold their tenants, thereby cutting down the return on their investment.

"4. A fourth cause of obsolescence is a shifting in the character and value of the location of the building. Rents are, in the last analysis, based almost wholly upon traffic, and a building well located, as regards the business traffic of a city, can obtain better rents than an exactly similar building not so well situated. Such shifting of business centers is taking place in every city in the country and is brought about primarily by the growth of the city. An examination of the growth of business throughout the country in proportion to the growth in population reveals the fact that business grows much more rapidly than the population. For example, the average population of the United States for the five-year period ending 1880 was 48,837,000 and the average bank clearings outside of New York for the same period was $117,000,000, while in 1920 the population was 103,504,000 and the bank clearings $155,150,000,000.00. In other words, while the increase in population was 114 per cent, the increase in the business of the country was 1525 per cent. In Chicago the increase in population for the same period has been 437 per cent and the increase in clearings 1405 per cent. The effect of this increase in business is reflected in the increase of land values in the cities. Since 1880 land tax values of Chicago have increased 1235 per cent, corresponding to a 437 per cent increase in population. In order to take care of this terrific increase in business which comes as the result of increase in population, the business centers of all large cities must inevitably either expand greatly in capacity or shift into new locations.

"One of the immediate causes of such a shifting of business centers is a change in the flow of traffic brought about by the rerouting of street car lines or principal through streets (such as the North Michigan Avenue development in Chicago brought about by the opening of the Boulevard Link), or of the building of new types of urban transportation, such as elevated roads, subways or new steam suburban facilities (such as the Forty-second Street district in New York City brought about by the opening of the Grand Central and Pennsylvania Terminals). Another of the immediate causes of shifts in business centers is the tendency of correlated lines of industry to get together in local centers. For instance, brokerage and banking houses tend to collect in one section of the business district, while retail stores will occupy another. In order to accomplish these segregations, it is very often necessary to move from the old center of business. Movements of this sort have taken place, for instance, in San Francisco and in Cleveland.

"5. A fifth cause of obsolescence is the increase in the value of the land on which the building is placed. As already stated, when the population and consequently the business of a city increases, the value of its land also very materially increases with the result that a building, which was an adequate improvement of the low value of land existing at the building of the building, is no longer an adequate improvement of the land at its now higher value. It therefore becomes necessary for the building to be torn down and replaced with a new building capable of paying a return on the new value of the land. This condition grows more acute the larger the city.

"6. Another cause of obsolescence is the damage to an office building through new and larger buildings adjoining it, so cutting off the light and air of the older building as to diminish the value of its space and consequently its earning power."

The circular then describes the effects which are of course a falling off in earning power. But what the circular does not consider is the Social Consequence of all this unplanned growth, its frightful waste, its brutal and inhuman congestion, its blind pursuit of individual benefits at the sake of social welfare as cause and effect pursue each other endlessly. Seldom has there been such an admission on the part of any industry as this plain statement of the evils arising from lack of planning, lack of land control, lack of any understanding or consideration of the future disasters that await us if we do not find some way to discourage the centralization of population by offering human beings a physical scheme which they will prefer to the one with which we are now so hopelessly struggling. What is to be feared in the commendable activities of the National Association of Building Owners and Managers is that the search for individual ends will obscure the true cause of the difficulties. Until these are dealt with they will seek the answer in vain.

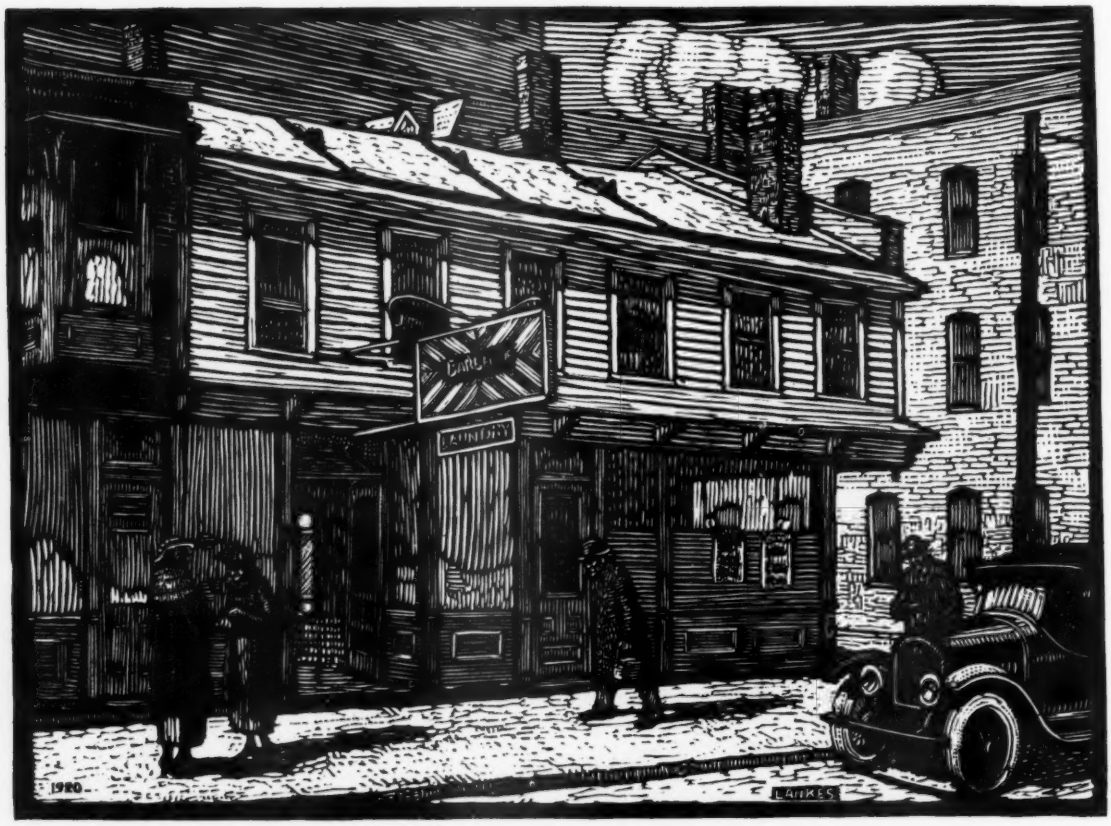
Exhibitions and Scholarships

AMERICAN architecture seems to be exceedingly popular in Europe. The Loan Exhibit first sent to the Paris Salon last year was transferred to the rooms of the Royal Institute of British Architects, numerous other requests having been received from continental centres. Now the R. I. B. A. asks that the exhibit be left in England for some time longer in order that it may be sent to the larger English cities. There is also a possibility that it may go to Rome. Undoubtedly, from the experience of the Institute Committee in charge, the exhibit might remain in Europe for many months to come, so keen is the manifest interest in the work of American architects.

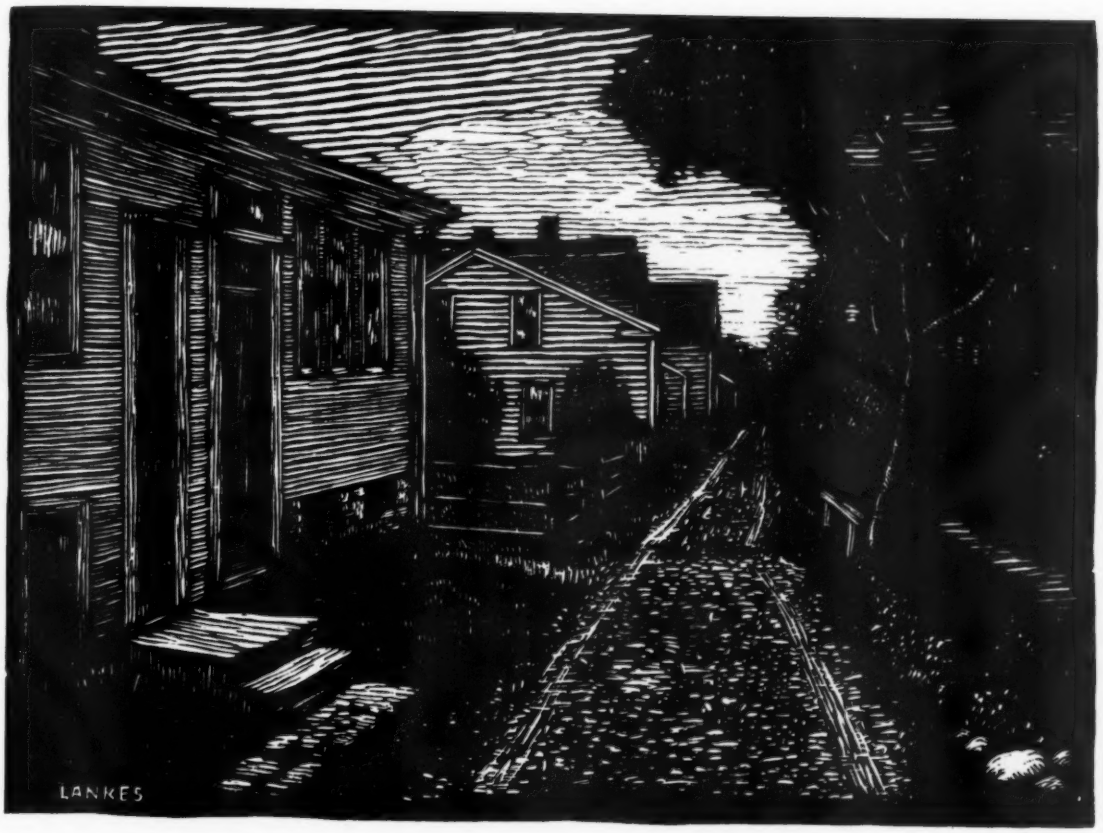
THE Le Brun Travelling Scholarship, founded by Mr. Pierre Le Brun in 1910 and awarded annually by the New York Chapter of the American Institute of Architects, has been won this year by Mr. Lionel H. Pries of Philadelphia, who receives $1,400 for travel abroad. The following competitors received mentions: first mention, George K. Trautwein, Philadelphia; second mention, John O. Veggezzi, New York; third mention, Paul Hyde Harbach, Buffalo. Mentions not placed: Roy Walling Cheesman, Cleveland; Louis Fentnor, New York; Gerald K. Geerlings, Philadelphia; Roy F. Larson, Philadelphia; Frederick R. Lorenz, New York; George N. Pauly, Pittsburgh.

Four Wood-cuts
J. J. LANKES

THE MOWER



St. Mary's Inn
J. J. Lankes



MILL RACE ROAD
J. J. Lankes

DESERTED HOUSE
J. J. Lankes

THE FINE ARTS BUILDING—CHICAGO EAST WING

Restoring the Fine Arts Building---Chicago

One year ago the Municipal Art and Town Planning Committee of the A. I. A. (Illinois Chapter), and the Illinois Society of Architects, submitted to the South Park Commissioners, a carefully detailed estimate of the cost to restore the Old Fine Arts Building in Jackson Park, built for the World's Columbian Exposition. The Commissioners have agreed to defer wrecking the building, but no action has yet been taken toward its restoration.

This building, says the Committee, is perhaps the best known structure in Chicago, loved and revered by tens of thousands of people, not only from the city but also from the entire country and abroad. Even in its present condition it is desirable to save it, since it possesses historic significance and a sentiment that appeals to the entire community. It is a cultural asset that any city should be proud to possess. The following are a few suggestions for utilizing the building:

(*a*) For the housing of a great model of the entire Columbian Exposition in Replica, which could be beautifully illuminated and which would be appropriate in this particular historic building and of interest and educational value to the student and public.

(*b*) For a branch museum of sculptural casts for the Art Institute which needs additional space.

(*c*) For a collection of large current architectural and sculptural exhibits that might otherwise be destroyed for lack of storage space.

(*d*) For space for loan exhibits of Chicago artists. This would also create opportunity for the sale of paintings and works of art.

(*e*) For the display of unusual drop curtains of artistic merit from the theatre or opera company that otherwise might be destroyed.

(*f*) For an appropriate place to start a school in industrial art.

(*g*) For a great center for the Liberal Arts, a stimulus for creative and American art in all of its various branches inclusive of music and the drama.

(*h*) To interest the Chicago University in this building and the opportunities presented for extension of art studies.

Judging by the many letters and resolutions the Committee has received from all sources, it is very evident that there is a wide-spread desire to save this structure.

It is proposed to restore the northwest corner of the east pavilion during the summer of 1922, and a fund is being privately raised for the purpose.

The committee is of the opinion that the restoration will be so strikingly beautiful architecturally in contrast with the deplorable condition of the balance of the exterior that public opinion will favor the restoration of the entire building, especially when it is demonstrated that the new work can be done against the skeleton of the old walls.

East Wing

The Fine Arts Building—Chicago

West Wing

THE FINE ARTS BUILDING—CHICAGO
Main North Portico

The Building of Manhattan

By FREDERICK LEE ACKERMAN

The accompanying aerial photographs taken from a great map covering the entire island of Manhattan, serve vividly to expose what has been the controlling point of view over a century with respect to the building of this modern city. The result of action is spread out before us; we may appraise it. Likewise we may in the light of our present knowledge appraise that system of institutions which gave rise to the peculiar architectural masses which go to make up the result. What do these photographs reveal; what is the significance of these architectural masses?

North of City Hall on both sides of Broadway, at certain points stretching from the East River to the Hudson and extending north to the present mid town section of Manhattan lies a vast mass of habitations built largely prior to 1880. North of this area along both sides of the island and extending from the mid town section to say 125th Street on the Hudson side and to the Bronx to the north east the city took form largely during the next 20 years. And still to the north of this second area we find another, miles in extent, reaching Spuyten Duyvil on the west and well out toward Westchester in the East. This vast area of the city came into being during the last twenty years. Let us turn to the photographs typical of these three periods of building and note the significance of the architectural forms.

Tenement Group I

A corner of the lower East Side of Manhattan typical of the first period. The East River to the right crossed by the Williamsburgh Bridge. This area was built over prior to 1880—largely before 1860, during which time a belief obtained that to cover less than 75 per cent of a lot was unprofitable and uneconomic. As late as 1900 we learn from Mr. John A. Dooner, Superintendent of Buildings for the Boroughs of Manhattan and Bronx, in his testimony before the New York State Tenement House Commission, of the then current state of opinion on this head. Newspaper files of that and previous date express the same opinion.

THE CHAIRMAN: "Is it your judgment, apart from the requirements of the law, that the ordinary tenement house built at the present day under the requirements of the law covering 75 per cent of the lot is adequately provided with light and air?"

MR. DOONER: "It is, sir; that is my opinion."

THE CHAIRMAN: "You think there can be no substantial improvement in the type of tenement houses now built?"

MR. DOONER: "No, sir; I do not."

An examination of the old and frightfully congested block bounded by Forsyth, Bayard, Canal and Chrystie Streets, made famous by the cardboard model of it in the first tenement house exhibit of 1900, discloses that it would have been possible to provide the same number of rooms, under better conditions as to light and air than obtain in the run of present day "new law" structures, in 6 story "walk up" tenements covering less than 58 per cent of the land. In this block 27.8 per cent of the rooms had no ventilation to the outer air.

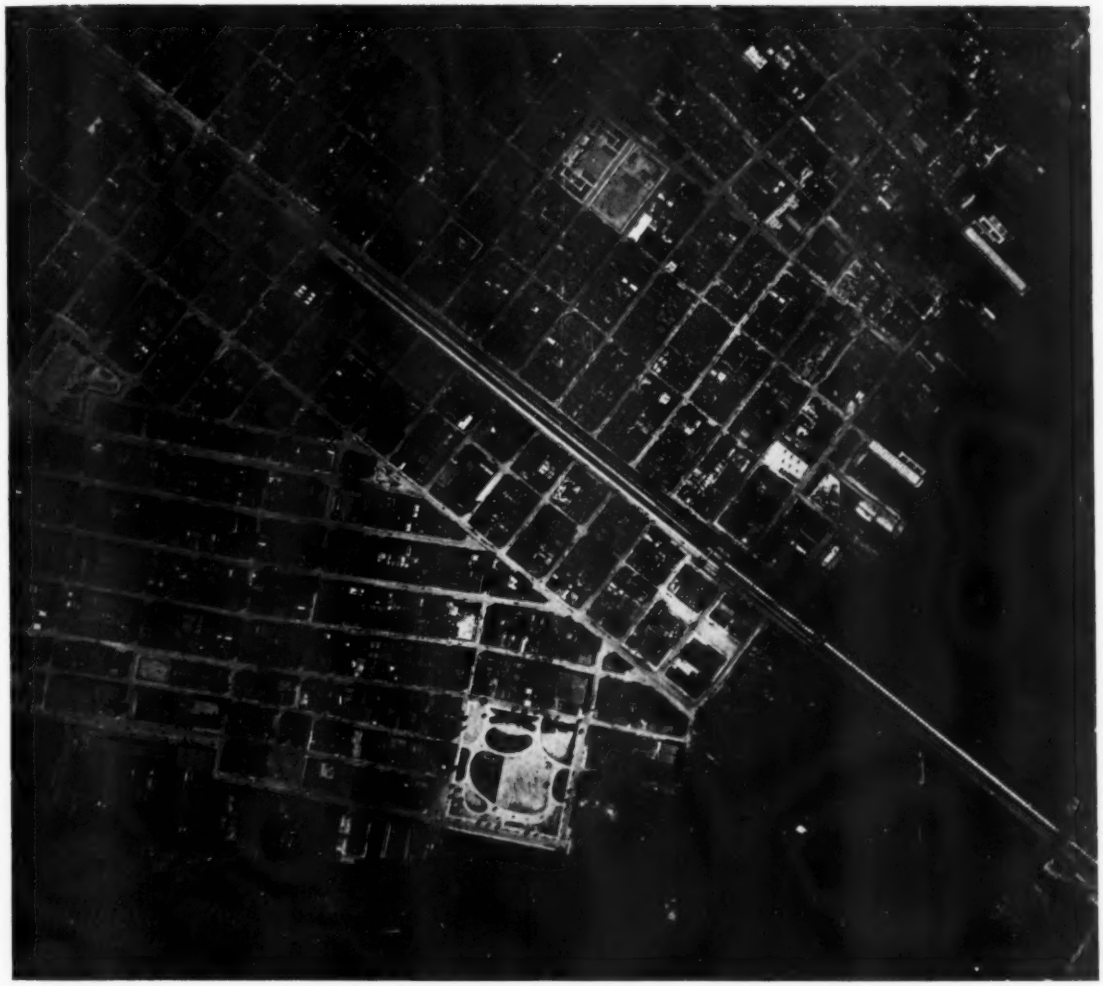
A fairly typical block bounded by Cherry, Monroe, Pike and Rutgers Streets contained (in 1920) 2,107 rooms the majority of which were badly lighted. The same number of well lighted rooms could have been provided in 6 story walk up tenements covering less than 50 per cent of the land. This is housing at the rate of approximately 32 rooms per floor on plots 100 ft. square.

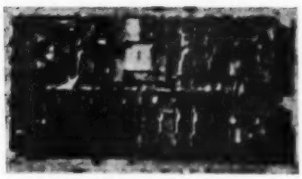
From an extended examination of the blocks in this area it is safe to assert that the same number of well lighted rooms with a full complement of baths could have been provided upon from 50 per cent to 60 per cent of the land as a maximum. And this could have been accomplished in a smaller volume of building.

Throughout this period and over this entire area the controlling factors in design were speculation, ownership of plots not exceeding 25 ft. in width and the assumption that net financial return varied with the area covered with building. 75 to 80 per cent of covered area was the rule. There is no trace anywhere in this vast area that technological insight played any part in designing buildings. Nor is there evidence that a workmanlike point of view was brought to bear upon the problem.

This area stands as a monument to the free running operation of business and the institutions of absentee ownership uncontaminated by considerations of sentiment, workmanship or technology.

Within this area were most of the 50,000 vacancies reported as of 1915. The buildings are fully occupied only when the tide of immigration runs full or when the shortage of habitations outside this area is so acute as to force a retreat on the part of those who cannot afford to live elsewhere. The area thus serves its purpose as a vehicle of Americani ation, as we say, and as a check against building a sufficient number of rooms to house the population. But it should be remarked in passing that intelligently directed greed would have produced a much better result.





THE BUILDING OF MANHATTAN

Tenement Group I—An Aerial View of a Corner of the Lower East Side, With an enlargement of one Typical Block Section. Courtesy of The Fairchild Aerial Camera Corporation, New York City.

The Building of Manhattan--Continued

TENEMENT GROUP II

A section of the upper East Side of Manhattan typical of the second area and period already referred to, Central Park on the left, with the Metropolitan Museum in the upper left hand corner. East River and Blackwell's Island on the right. The Vanderbilt's Model Tenements to the left of the little park, with regularly spaced trees, at the river's edge. City and Suburban Homes Companies tenements at the top of this park and extending back to Avenue A, parallel with the river.

The half of picture to the right discloses a large percentage of "old law" tenements of the later period (1880-1900). Three blocks to the right of Central Park are given over largely to private residences, and tall apartment houses built during the last decade.

Aside from the "Model" tenements and the modern apartment structures along Park and Fifth Avenues, the design of the entire area is conceived in terms of the 25 ft. plots. Much of the area to the left was developed by speculative builders whose individual operations often covered many lots. This condition however did not in the slightest degree affect the result. Large plots are conceived as subdivided into so many 25 ft. frontages for purposes of sale; and these imaginary boundaries operate to dominate completely design. Throughout this area and period, except for the very recent development, the old concept of covering every inch of land allowed by law held full sway. Conditions of ownership still control the situation. Dark rooms, waste corridors and halls, useless volumes of building stand characteristic.

Such gains as were made in light and air were grudgingly conceded to a rising tide of sentiment against such conditions as obtained in the area first referred to. Besides, it had been found that crowding beyond a certain degree did not pay.

We should not be misled into thinking that technological considerations, economic planning and the economic use of labor and materials had entered to shift the point of view. The discussions revolving around what had best be done ran within the frontiers of a sentimental consideration. It was sentiment rather than technological or economic considerations which accounts for the Model tenements of this period. All this time the way out was viewed as possible only by resort to enterprises of a philanthropic or a semi philanthropic character. It was conceded that it was a case of being content with a "fair interest" return in the place of speculative profit or nothing could be done about it. See the Reports of the Tenement House Commission and the newspaper files for 1896 to 1900. Apparently the hope was to solve the problem by completely avoiding it. The impersonal, technological outlook which would raise questions concerning what had brought about the deplorable conditions, or which would deal with the problem of planning without making 70 or 75 per cent of the lot the point of departure in design plays no part all this time. The area is expressive of business traffic conceding a little here and there to the demands of sentiment.

NOTE: The enlargement of a block section on page 115 shows nearly all tenements of the dumb-bell type before 1900.

On page 117 the enlargement shows all old-law tenements, both railroad and dumb-bell type, the former having no side courts.

On page 119, three-quarters of the block shows new law tenements: the lower left hand corner shows old law types.

THE BUILDING OF MANHATTAN

Tenement Group 11—An Aerial View of a Corner of the Upper East Side, With an enlargement of one Typical Block Section. Courtesy of The Fairchild Aerial Camera Corporation, New York City.

The Building of Manhattan--Continued

TENEMENT GROUP III

The area to the right is very largely made up of New Law 6 story walk up tenements covering ordinarily up to the maximum of 70 per cent allowed by the law. The impossibility of using 25 ft. lots for single operations under conditions imposed by the Tenement House Law now forces the use of plots of 40-50-75 and sometimes 100 ft. in width. The forms of the buildings disclose the then prevailing type of interior arrangement, that is, "railroad" apartments, long private halls. Buildings of this area are wasteful in the extreme. For the most part the plans of individual buildings are but a recall of the old arrangement in plan which was the direct outgrowth of the use of 25x100 ft. lots.

The controlling factor in design is still absentee ownership. What is curious however is that the type of plan used throughout this area and period actually relates to a condition of ownership which no longer obtained. It is again safe to say that technological considerations play no part in the design of building in this area. The ideas of the speculative builder brought over out of the habit of building on 25 foot plots still completely dominates the arrangement of the plan and the mass of the structure. And again the magic 70 per cent holds sway. As before the designer creates his new and larger mass of structure to coincide with the limit of mass allowed by the law; then he proceeds to burrow his way out to the light in the case he reaches a street or to gloom in the case his burrowing brings him to a court or side yard. Useless halls, corridors, long rooms, excess volume of building again characterize this area.

To the left, New Law Tenements, "walk up" and elevator "apartments," built consequent upon the extension of the subways. Use of still larger plots to be noted. The type of plan changes as a consequence. The builders are evidently trying this and that but always covering 70 per cent of the land. Here and there we note that a bold operator has "opened up" his plan; this however occurs but rarely. Any one familiar with the plans of the structures on this area and who has "seen the light" with respect to the advantages of covering less area will have no hesitation in asserting that the same accommodations could have been provided with in 15 to 20 per cent less volume of building with a corresponding increase in light and air. On the whole the preconception obtains with respect to covering all the land allowed by the law. Absentee ownership still controls the situation. The problem of building is still confined to the use of single lots. Nowhere in this area do we find any evidence to suggest that the block might well be viewed as the dominating factor in design. The technician evidently is still waiting for his opportunity.

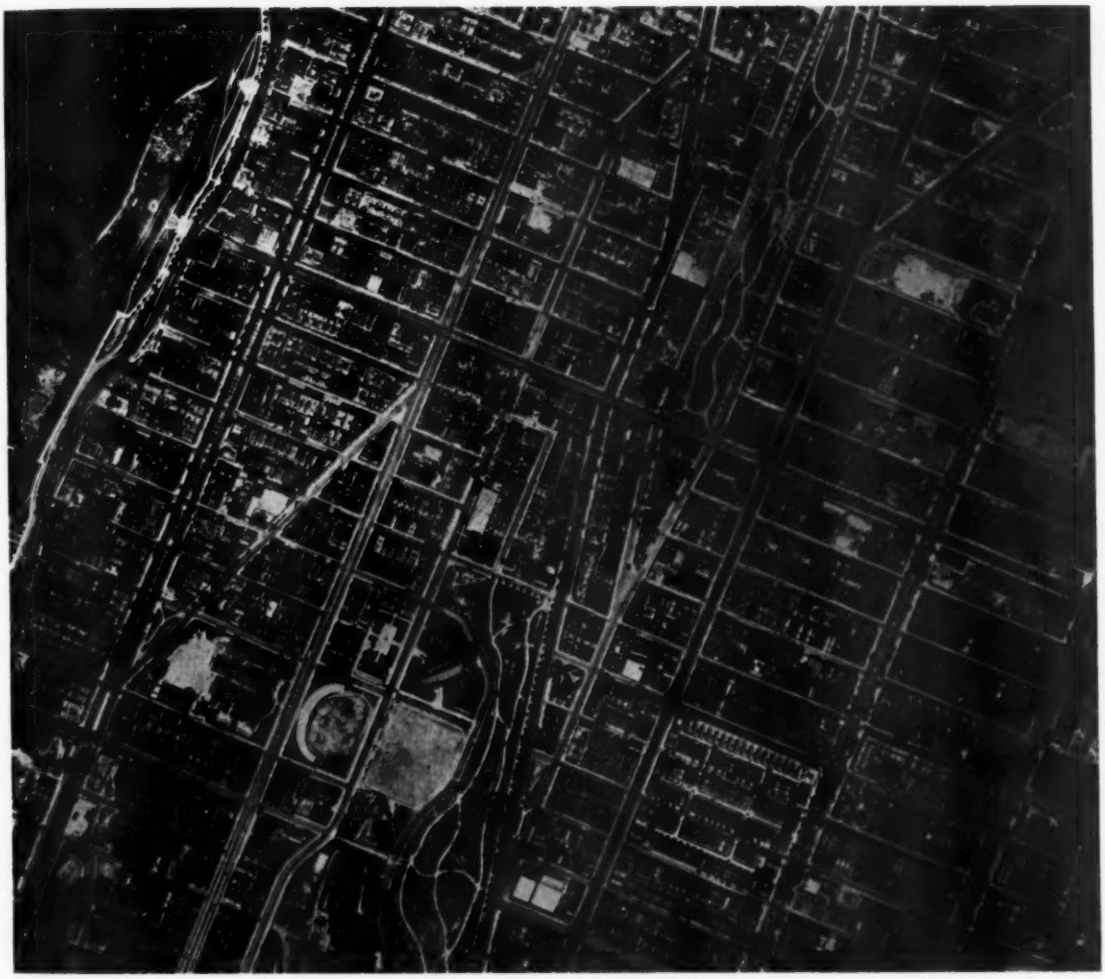
Conclusion

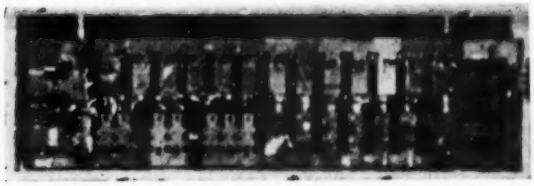
These three pictures cover the span of nearly a century. They represent a tremendous amount of human effort. The thing has been done under the direct—and one might say—the sole guidance of the business point of view and the institution of absentee ownership. What progress has been made—that is to say, what changes have taken place from time to time have come about through the pressure of organized opposition, always guided by considerations of sentiment. From the standpoint of those directly responsible for the creation of this peculiar environment, it has not been a case of groping after a more adequate thing. No such attitude has characterized their work; they have stood firmly opposed to any and all changes.

But from first to last there has been available a body of technological knowledge and insight which would have guided the effort which these pictures represent toward a more adequate result. From first to last that body of knowledge and insight has not been drawn upon. Those possessing such insight have been forced by the business-like considerations attending the building of these structures to stand on one side or follow. Only when the forces of organized public sentiment or a philanthropic move has opened the door of opportunity, has the technician played any part in designing this city. But when it was no longer the confines of a 25'x100' lot which stood in his way it was the carrying over of the preference for a type of plan which had been the outgrowth of that shaped lot which hampered him. When the demand for this type of plan gave ground under the force of laws enacted, then the excessive percentage of built-over area allowed by those laws stood to defeat him.

One may view this record of progressive change as progress, and so it is—of a kind. But against that rating stands the condition that the changes run in the direction of ever greater congestion, consequently higher land values, higher rents and an ever more baffling transportation problem.

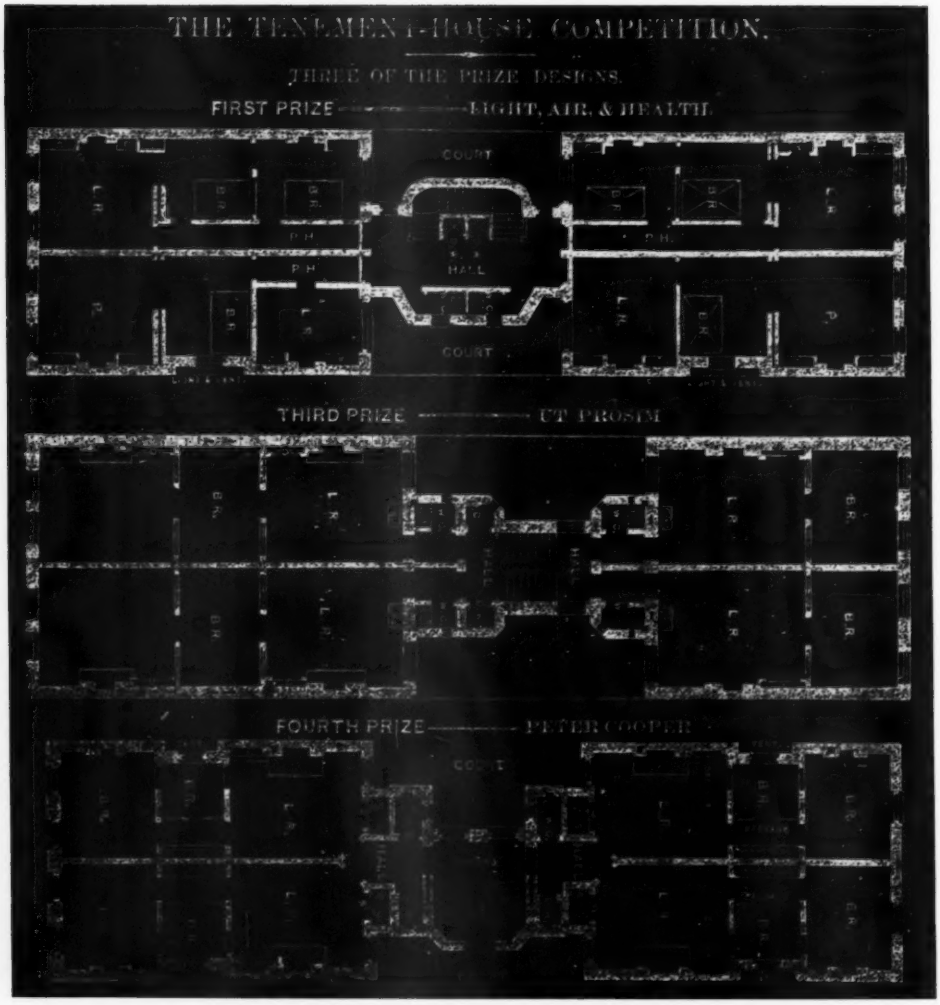
We now know that there has never been an occasion for covering so much of the land as is the case exposed in these three photographs. We know that a much lower percentage of cover is advantageous to everyone concerned. But in the face of this knowledge we continue to codify not this knowledge, but our preconceptions and fallacies in our building laws and zoning ordinances. Authoritative legalized congestion is being induced into our small communities by the enactment of laws which permit the same conditions as disclosed in the third illustration. This is being done under the auspices of what passes for a scientific point of view. But these laws and ordinances are not based upon a scientific point of view. For the time being, such laws are primarily concerned with the problem of so regulating absentee ownership and business as to insure that no harm will come to either. But this is the same as saying that laws governing the erection of buildings are now so framed as to leave scope for falsely conceived possibilities of profit taking in land and building. It was the falsely conceived possibilities of profit taking that induced us to build structures approximately 20 per cent of whose volumes is utter waste and more. For by so doing we reduced our light and air by so much.





THE BUILDING OF MANHATTAN

Tenement Group III—An Aerial View of a part of the Upper West Side, With an Enlargement of one Typical Block Section. The Hudson is seen on the left, the College of the City of New York in the lower center. Courtesy of The Fairchild Aerial Camera Corporation, New York City.



The First Tenement House Competition in New York City

Reproduced from the New York Tribune of 7 March, 1879.

The text underneath the illustration as published in the *Tribune* more than forty-two years ago is a remarkable piece of evidence. It shows very clearly the futility of the methods that have been pursued during the intervening time, that are still being pursued, although their futility is slowly being recognized. The text of the *Tribune's* statement is as follows:

"These diagrams show the second floors of the designs for model tenement-houses, which have taken the first, third and fourth prizes in the recent competition. The plan to which the second prize has been awarded corresponds so closely to 'Light, Air and Health,' that it is not necessary to reproduce it. The four designs are modifications of a single plan. There are accommodations for four families on each floor. There is a central hallway approached from the street by a narrow entry. From this main hallway stairways lead to the upper floors. In this central hallway are the water closets. On each side are two small courts, and in the rear there is a narrow area. The frontage is 25 feet and the depth, including the area in the rear, is 100 feet. The suites are shown in the diagrams; living rooms, bedrooms, closets, private hallways, sinks and dumbwaiters being designated by initial letters. There are no windows on the sides, the lot being supposed to be inclosed with brick walls except in front.

"These designs have one defect in common. Each suite of rooms has a bedroom which borrows light and air from adjoining apartments. In 'Light, Air and Health,' for example, the middle room in each suite has no window. In two of the suites, there is a bedroom between the living room, or kitchen, and the parlor. The door between the parlor and the bedroom is very wide, so as to let in as much air and light as possible, and there is a vent-hole at the side. The room, however, is so small (9½ x 10½) that it will hold scarcely more than a bed and a cradle, and the ventilation is obviously defective. In the other two suites, the middle room is a bedroom between another bedroom and the living room. The doorway is not so wide as in the former instance, and there is no ventilating shaft or well. In 'Ut Prosim,' the suites of two rooms in the rear are adequately lighted and ventilated, but those in front have a dark bedroom, without so much as a well to furnish air. In 'Peter Cooper,' the middle bedroom depends upon a well for light and air. In 'Kensington,' which received second prize, each suite has a middle room, which is lighted indirectly.

"The merits of these plans are obvious. The occupants have fire-escapes in the rear and fire-proof stairways upon which to depend in any emergency, such as fire. Each family has the advantage of privacy. Three of the suites in 'Light, Air and Health' have private halls, and the other suites in this and in the other plans have direct communication with the entrance hall. The sanitary appointments, especially in respect to water closets, are excellent in these three plans, but are faulty in 'Kensington' (not shown above), where the water closets are outside the building in the rear. So radical a defect ought to have condemned the plan. The general arrangement of the rooms in each design is sensible and the plans are comparatively inexpensive. The cost of 'Light, Air and Health' is estimated at $12,248; that of 'Peter Cooper' at $14,275, and that of 'Kensington' (not shown above), at $9,500."

Around the Secretary's Table

By THE SECRETARY

THE SECRETARY: Speaking of architects' fees, I received about a year ago one of those inquiries to which it is quite impossible to give the complete and definite answer that is desired and evidently expected. A client, by nature a business corporation, had called in an architect and given him instructions regarding a restaurant that was to be built at a desired expenditure of about $70,000. No mention of fees was made by either side. Plans were developed and at the suggestion of the architects the work was arranged to be done under a group of separate contracts. The architects were to give full services, including supervision. The work was in an existing building and therefore involved a considerable amount of alteration work as well as new construction. About three months after the work was started, at which time contracts totaling nearly $90,000 had been let, the architects presented a contract demanding a fee of 20 per cent on the cost of the work. The officers of the corporation thought this was exorbitant and asked if I could help them to come to an amicable settlement.

The fee certainly seemed high, at first glance, but a complicated situation of this sort cannot be entirely divulged in one brief paragraph, and any statement would have been certainly unwise and probably in error if made before both sides had been heard in full detail. So I referred them to the president of the local Institute Chapter, who could advise more safely after the personal conference that would be possible.

Now I mention this particular case not with any desire to discuss the proper fee for such a piece of work, but because it raises the broader point regarding what fees it is appropriate for an architect to name under various circumstances.

Of one thing I am quite certain and that is that whatever the fee it should be stated and understood at the outset. Not necessarily at the first interview however. An architect who would charge on some basis of professional fee plus costs would need to study somewhat the scope of the problem, and the various elements of cost and duration of time involved, before being able to name an appropriate fee and any reasonably accurate estimate of costs. An architect who would charge a percentage fee might frequently need the same opportunity for a survey of the problem before hazarding a guess as to which per cent would, with his costs extracted from it, leave him a satisfactory balance for his pains. But to allow work to proceed on a complicated problem until one's services are more than half rendered and the owner is wholly committed is clearly poor practice.

MR. MAURAN: Do you have in mind a case where the owner is definitely awarding the work or is merely asking the architect, and perhaps other architects also, what fee he would charge if the commission were awarded to him?

THE SECRETARY: The latter case is exactly what I have in mind. Suppose I name a fixed fee plus an approximate item for costs, the two together being, let us say, just under six per cent. The other two architects, let us assume, both say that they will charge the usual six per cent. Am I competing in price? Am I violating Canon 11 of the Code which says that it is unprofessional "to compete knowingly with a fellow architect for employment on the basis of professional charges?"

MR. FENNER: So long as there was but one recognized method of determining the fee, the Canon of Ethics could be very simply stated—that it is unprofessional for architects to compete with each other on the basis of professional charges; but with a variety of methods of charge in use it is becoming more difficult to fairly apply this Canon.

MR. MORRIS: In my opinion it is futile to attempt to preserve the fiction set forth in Canon 11 that members of the Institute can be prevented from competing with fellow members on the basis of professional charges. They may not compete knowingly, but they do compete actually. The prosperous and successful architects compete successfully, and vice versa.

THE SECRETARY: For example?

MR. MORRIS: To illustrate: A is a first-class, capable, conscientious architect. He studies and restudies his plans, changes drawings that are partially finished if he finds they can be improved to his client's advantage even if it be to his own temporary financial detriment. If errors have been made in executed work due to mistakes in his office, he frequently corrects the work at his own expense. His fee, we will say, is 6 per cent. His methods of practice and standards of performance are known in his community.

B, of the same city, county or state, as A, is a second-rate architect. He has not the training, the ability or the morale of A. If his work is done quickly and inexpensively in his office, his building is structurally sound, and sufficiently well executed to pass the building inspectors, he is happy and has performed his duty, as he sees it, to his client. B also gets 6 per cent. His methods of practice and standards of performance are also known in his community.

Years go by. A is successful, wealthy and happy. He gets the business. B is still shuffling along, getting a poor living, jealous of A, and cannot understand why he does not get his share. His charges are the same.

The answer is that A succeeds and B does not succeed, because A winning out in direct and active competition with B *gives and furnishes* more for the same money. I maintain that it cannot be refuted that he is competing on fee, however we may attempt to qualify the term.

THE SECRETARY: Of course that goes back to the fundamental inconsistency of a flat rate for all architects. We are pretty free in our criticism of labor unions for demanding the level wage and reducing mechanics to an average efficiency, below the level that many could attain. Of course the situations are not exactly parallel. We

have no mandatory code. The very constitution of the Institute prevents any code that it issues from being mandatory. But it does indicate approval of a uniform scale of charges by all architects, and this indicates a uniform quality of service. In view of the peculiarly personal nature of certain elements of an architect's service, any such equality is of course impossible.

MR. MORRIS: We all know architects who charge a higher rate than that provided in the Institute schedule, and we know others who charge less, because they furnish less. I am firmly convinced that if a client wants first-class work he goes to a first-class architect and pays his fee. If he wants an inferior article, a hand-me-down, he knows his way to the counter where such wares are sold. The Institute can never produce an equality of ability or performance throughout its membership.

MR. FENNER: I am convinced that we must maintain the fundamental principle that professional men do not bid against each other for work.

MR. STURGIS: There is a modicum of truth in what Morris says but there is also, on the other side, the conscientious, thorough architect who studies the problem to the advantage of the owner, even if it be to his own financial loss, and is often passed by later by the same owner in favor of the showy and often extravagant architect, whose aim is to put into the building everything that he thinks he can make his owner pay for. Unfortunately, there is a large class of owners who demand and enjoy extravagance.

MR. MORRIS: Cut-throat competition for the same kind of work is ruinous, of course, but such competition cannot continue for any appreciable period of time. It will, owing to lowered quality of performance, sooner or later, lose the business of such persons as indulge therein; and the plugging old tortoise who persisted in turning out first-class work and charging first-class prices will, as usual, come under the wire first. We cannot alter such basic facts and conditions as these by any action that may be taken at the conventions.

THE SECRETARY: This discussion involves, of course, only those cases where an architect is approached by an owner and requested to state what his fee would be for a certain piece of work, and is told, or otherwise becomes definitely aware, that other architects are being similarly approached. This action by an owner is perfectly proper, indeed is desirable, provided he seeks to learn the general qualifications of the various architects and not merely the amounts of their fees. The question is how should the architect act in naming his fee in such circumstances?

MR. STURGIS: No false modesty should deter an architect from giving complete information about his experience and ability, his complete organization, and the way work is handled by him. The cost of professional service is a negligible item in the total cost of the building; the character of that service is important, and is a very determining factor in the cost of the building.

MR. MAURAN: The fundamental principle upon which Canon 11 is based, as I understood it, is that when a piece of work is offered to one architect and no other is being considered, that architect has the fullest right to fix his compensation at any figure mutually acceptable, but when a proposition covering fees is offered to a number of architects for consideration no option is given to propose any less fee than the minimum prescribed by the schedule of the Institute without acting in contravention of Canon 11.

MR. FENNER: Suppose our regular charge for office or loft building work has always been 5 per cent; and at that is more profitable than any other kind of work. Now, if a man should come to our office and say that he intended to build an office building, that he had three firms of architects in mind and would like from us a list of office buildings designed by us and a statement of our charges, I should say, "our charge is now and always has been 5 per cent." I think it would be immoral to do otherwise even though, in so doing, I might be guilty of a violation of Canon 11.

MR. KOHN: You are perfectly correct. The custom as to fees for office and loft buildings in New York is 5 per cent. Those who compete on basis of price for this class of work all charge 2½ and 3 per cent. It seems absurd to suggest that Fenner is competing as to price when he sticks to the same charge of 5 per cent which he has always made.

MR. MORRIS: We are all speaking glibly of 3, 4, 5 or 6 per cent, and do not particularize concerning even the *amount* of service rendered—to say nothing of quality. Which, if any, of these percentages include engineering services in the technical branches? No two jobs are alike in my office, and what is good and fair pay on one, would be absurdly high or low on another. I have no fixed and unalterable schedule, nor any immediate intent of adopting one. I have lost money at 10 per cent rates and made it at 4¼ per cent. I cannot agree that there is an established rate in New York of 5 per cent on loft buildings. If they are big enough, a man confining his business to such could soon retire.

MR. FENNER: I suspect that under a literal interpretation of Canon 11, as Mauran defines it, I would be obliged to say 6 per cent. If the two other architects were equally punctilious, they would name the same fee, with the same result that the owner would pay one per cent more than otherwise. It seems to me that this would be a very dangerous attitude for the Institute to take.

MR. MAURAN: It seems to me this discussion has gotten away from the fundamentals and that too much stress is being laid on details and hypothetical cases and too little emphasis placed on the purpose of this Canon, in fact, of all the Canons. If one will read carefully the Circular of Advice and the Canons which epitomize its dissertation on the decencies of professional conduct, the outstanding impression remains that it merely enumerates the pitfalls which we all instinctively try to avoid. What are they there for—why is it necessary to stress these elaborations of the Golden Rule? I think it can be put in a nutshell.

Suppose some prospective client, whether a friend or a stranger, asks me for my charges for a certain type of building and is even frank enough to say that he pro-

poses to ask the same information from Jones and also Smith. Is it conceivable that I reply by quoting Canon 11? Of course not; my course is perfectly clear and one takes no advantage, such as Canon 11 guards client and architect from alike, in replying that the type of structure contemplated can be done by any reputable architect as, for example, Jones or Smith, at a fee less (or *more* if it be in that class) than the recommended minimum, *but* since that is the case won't he save us all embarrassment and secure *just what he desires* by determining in advance whether Jones, Smith or I will give him the results he desires on an assumption of a proper fee. Of course he will, if he is a client one would want and Jones and Smith are going to tell him the same thing if they be the kind of men I conceive them to be—professional confrères worthy of the client's trust working under a gentleman's agreement with the world. And if Catchem and Skinum are also being considered, they would come under the head of those so-called architects of whom you've spoken to the would-be client as in the large class who will doubtless *do his job* for little or nothing. And if the Institute is unfortunate enough to have on its rolls either Catchem or Skinum—why *that* is where Canon 11 shoots and shoots to kill.

THE SECRETARY: That, of course, plays the game safely and with due regard to one's professional brethren, but I wonder if it shows due regard for the prospective client who is refused an answer to a question that he may well consider a perfectly legitimate one.

MR. FENNER: The Institute's codes and its Canon of Ethics mean nothing more nor less than that practitioners of a profession should observe in their business and professional relations with each other, the same principles of courtesy and fair dealings that gentlemen observe in their social relations with each other. I think we must recognize the fact, however, that changes in architectural practice are occurring and that, while maintaining our fundamental principles, we must adapt their application to changing conditions.

THE SECRETARY: That, of course, is true in this matter of fees, with what appears to be a growing interest in various fee plus cost methods.

MR. FENNER: Exactly. I take it that we are all agreed that if Mr. A is in negotiation with a prospective client and has named his fee for doing the work, it would be unprofessional for Mr. B to seek out that same client and offer to do the work at a lesser fee, but if Mr. A named as his fee 6 per cent and Mr. B names cost plus a lump sum, how can one determine whether or not there is competition in price?

THE SECRETARY: This difference in method and actual results raises a question of competition in fees when, for instance, two or three architects are working more or less continuously for the same owner, let us say a public service corporation, with a fairly steady building program. Two of them, let us say, work on the customary 6 per cent basis; the third on a fee plus cost basis the results of which, in terms of percentage, vary according to the varying conditions of each job and the trend of the building market. If the building costs more than expected, due to a rising market, the result at the end is a percentage that is lower than originally anticipated as based on a lower estimated cost. It may be only 5 per cent. Is he competing improperly with the others and by showing a lower cost of his services, is he to be considered as competing for future work on a basis of price?

MR. FENNER: Several years ago the first departure from the old percentage basis was made, I think, by Sturgis, who developed a system based on cost plus a fee. At the present time, modifications of this system seem to be coming into use more and more. I have also seen recently a tendency on the part of clients to ask for an agreement based on a lump sum. Not long ago one of the leading real estate operators in New York asked me how long it would be before architects would be willing to name a fixed price for their services so that a person going into a building operation could prepare a definite budget at the outset which he could depend upon.

THE SECRETARY: Mr. Mauran has recently made a plea for the "fixed price" method. But I don't quite see the logic of the real estate man's plea. A man going into a building operation cannot very well prepare a definite budget unless he can predetermine exactly the final cost of the building itself. If he can do this the architect can easily give him an outside limit of cost for all the professional services and incidental expenses whether he works on the basis of a fixed price or on a percentage basis or any other basis. The variation likely to occur in the cost of the building itself makes the variation in the architect's charges immaterial, I should say.

MR. MORRIS: The real estate man (or owner) in my opinion is to be censured, particularly in spending another's money, if he does not build to a budget. I think an architect, as a matter of economic duty, should be willing to quote a flat lump sum fee for his services in connection with any given building. Preliminary sketches of insignificant cost will determine its approximate cubage and general character. If his cost records are clear and intelligible, and he is reasonably conversant with market conditions, he can approximate its cost. Figuring a proper fee in dollars is a simple matter. The contract can and should provide a reasonable increase or deduction of fee, if the building by the owner's desire is materially changed in volume or character. I know that this method has worked to the satisfaction of owner and architect, and the architect's fee as an item in the budget is a known quantity. If the owner or the architect are either or both not on the square, the scheme will not prove satisfactory, any more than will a percentage fee or cost plus a fee.

MR. STURGIS: The practice in my office is to name a fixed fee for my own service; to estimate, and generally with some accuracy, the cost of draughting, of the various kinds of engineering service required, incidental expense of conducting the work, and of field superintendence. This is generally a more complete statement than is contained in calculating six per cent on an estimated cost of the building, and less liable to vary. In making up a complete statement or budget for an owner there

would be given the cost of the land, the cost of the building, the cost of furniture, and the cost of commissions, engineering, incidental expenses, and the superintendence of the building, and, under these various headings, complete cost of the operation would be before the owner.

MR. FENNER: I also find evidences that prospective builders, especially corporations about to undertake important building operations of a more or less commercial character, are visiting three or four architects, making a careful study of their office organization and equipment, their methods of handling the business of construction and taking these elements into consideration, as well as the fee to be charged, in making their selection of an architect.

MR. STURGIS: This is as it should be.

MR. MORRIS: My opinion is that Canon 11 should be changed to read as follows:

"It is stupid and poor business to attempt to secure work by quoting a fee lower than that necessary to insure a fair profit to the architect after the performance of his services to the very best of his ability." And let it go at that.

MR. KOHN: It may be necessary to change the Canon to which you refer because it does not meet many modern conditions, but a man who has a price for his goods and does not vary that price by reason of the price made by anyone else is not competing with that other, is he? The word "competition" implies a process by which the price for an article is changed if necessary in order to get business. If I established a custom with regard to the price that I charge for my services on a particular class of building without making it lower because I know some other one makes his higher, I am not competing on price.

THE SECRETARY: That would seem to involve proving that when you charged customarily 5½ per cent for a class of work that others generally charged 6 per cent for you were doing so without any design to create a prejudice in your favor with owners of this class of property.

MR. KOHN: This argument is, I realize, quite inadequate when it comes to the case of a man who has never done that type of building and is suddenly asked for his price. It seems to me, however, that even though no custom had previously been established in his office, the custom of the profession has been established and is known to him, and he may very well say "I do not compete as to price; I charge what the leaders of the profession have already established as customary."

I realize again that there is a hole in my argument when it comes to public buildings or monuments, where no precedent has been established. There surely the services of different men vary so much in their value that it would be absurd to expect McKim's to value theirs at the same price as John Smith. The Institute Schedule clearly provides 6 per cent or more than 6 per cent for that type of work and I should say that any one ought to have the right to state any figure equal to or above the schedule rate.

MR. WAID: I cannot but agree that Mr. Fenner is correct in his attitude in the matter, as expressed in his remarks relative to naming a fee for an office building. The problem is certainly a difficult one. While simple enough (?) in private practice, we certainly need more carefully considered advice with respect to architects bidding on public work.

MR. KOHN: For my part, I wish we could get rid of that whole schedule business, or if that is impossible get rid of the Canon with regard to competing as to price. We need the idea of course, because it is valuable in raising the standard in many of our communities, but why cannot it be put in the category with advertising? There has been no outburst of billboard and newspaper advertising since we transferred it out of the class of dangerous crimes into the category of "no gentleman does this."

MR. MORRIS: I am glad to see that Kohn seconds my motion.

MR. STURGIS: I am inclined to agree with Mr. Kohn, that it would be a good thing if we could simply eliminate the schedule altogether, and put in place of it a short explanation of what good practice is.

THE SECRETARY: There seems to be a general agreement that intentional price-cutting for the purpose of getting a job away from some other known architect or architects is improper. It is clearly made so by Canon 11. The difficulty seems to lie in the application of the brief statement in the Canon to a multitude of present-day situations, where a statement of one's charges may be appropriately demanded and where the element of competition, in the mind of the client at least, will inevitably be present.

Is it enough if one names his standard fee, regardless of whether it is more or less than 6 per cent or than what is customarily charged by others?

Is it necessary to refuse the client an answer to what is to him at least a perfectly legitimate question in order to play with one's brother professionals?

Are there not several questions involved to which more conclusive answers are needed than our present discussion affords?

Skilled Mechanics in The Building Trades

By BURT L. FENNER

Pioneer work in the development of a comprehensive Apprenticeship system, which is designed to meet the increasing need for skilled and properly trained mechanics in the Building Trades, is well under way in New York City.

The movement is being fostered by the New York Building Congress. Instead, however, of superimposing any new organization to carry out the plans under contemplation, it is proposed to do so by bringing together

the activities of the established employers' associations, the labor unions, and existing educational facilities.

The first step was made by the Building Congress at a meeting of the Executive Board held on 10 January last, when a general committee on apprenticeship was appointed which includes representation of investment, design, engineering, material supply, management, labor, and related interests.

After careful investigation of the conditions by this committee, it was determined that the only resource for providing men better trained in the building trades and in citizenship than present day conditions permit, was in establishing a thorough and sound system of instruction based on apprenticeship principles.

The general committee on apprenticeship then created an executive committee from its membership which consists of six members, two of whom represent employers' associations, two represent labor unions, and two, related interests.

The writer, as Chairman of the Apprenticeship Committee is being assisted in the Executive Committee by Clarence S. Stein, Secretary, Architect, 56 West 45th St., Dr. John L. Elliott, Director Hudson Guild, 436 West 27th St., Ronald Taylor, of the Ronald Taylor Co., Inc., Cement Floor Contractor, M. F. Westergren, of the M. F. Westergren Co., Inc., Sheet Metal Contractor, Roswell D. Tompkins, General Secretary, and John Halkett, Member of the Executive Board, of the N. Y. District Building Trades Labor Council.

The service is rendered through a Headquarters Office, which is in charge of a specialist on apprenticeship, employed by the Congress. This office conducts the business of the Committee, gathers information necessary for decisions, and carries out the policies and development determined upon by the Committee. As Educational Advisor the committee was lucky enough to secure the service of Frank L. Glynn, the former Director of Vocational Education of the State of Wisconsin.

The direct management and operation of the movement is provided for in the establishment of a general Board with equal representation from the Building Trades Employers' Associations, and the Building Trades Unions, to be jointly financed by employers and labor.

This committee shall have the authority and necessary funds for the employment of such assistants as may be required to devote their entire time to this field.

These assistants will then establish standards and carry on the operation of the work through the Joint Trade Boards now existing in each trade and composed of an equal number of representatives from employers and labor engaged in that trade. Educational experts shall act with such boards.

The work of each Joint Trade Board will be to adopt rules and regulations for the trade that it represents covering the following items:

1. Enrollment of the apprentice with the Joint Trade Board.
2. Identification for apprentice in trade or at work.
3. Probationary period of apprentice before being finally accepted.
4. Maximum and minimum age for apprentices.
5. Term of apprenticeship.
6. Division of apprenticeship into periods of advancement.
7. Periodic examination of apprentices.
8. Granting of advanced credit to apprentices for previous experience in the trade.
9. Transfer system for interchange in employment.
10. Apprentice wage by periods:
    At work
    In school
11. Overtime work limits.
12. Hours per week:
    At work
    In school
13. Determination of time for school attendance.
14. Enforcement of school attendance:
    By employers
    By unions
15. Apprentice fees or dues.
16. Determination of apprenticeship classification for the trades within the jurisdiction of the Joint Board.
17. Statement of trade processes to be taught apprentices in each such classification:
    At work
    In school
    Note: The apprentice must have provided for him the opportunity to obtain all-around experience while he is at work.
18. Approve courses of study to be taught apprentices in school instruction, including technical studies related to the trade in which they are employed and training for citizenship.
19. Supervision of apprentice:
    At work
    In school
20. Periodic reports on apprentices to Joint Trade Board:
    From work
    From school
21. Regulation of adjustments:
    For employer
    For apprentice
22. Minimum ratio of apprentices to journeymen.
23. Approval of employer indicating:
    That his work is sufficiently varied and equipment sufficiently complete to give the apprentice the required diversity of trade experience to cover his trade classification.
    His ability to provide continuous employment to the apprentice during his apprenticeship period subject to conditions not under his control.
24. Special regulations as may be necessary.
25. Agreement by apprentice to abide by rules established.
26. Granting of diploma upon the termination of apprenticeship.
27. The definite provision of classes in school for the instruction of apprentices.

One of the serious obstacles in the development of the apprenticeship in the building trades in the past has

been the seasonal or intermittent employment. Experience has shown that where apprentices have entered the building industry, they have often drifted into other occupations during dull periods in building. They are attracted by steady employment and immediate returns rather than by appreciating the ultimate advantage of thorough training in a skilled occupation. Later as citizens their earning power in the juvenile pursuit is not sufficient to provide for living costs that have accumulated with larger responsibilities. The work they have followed cannot pay any higher income so that they are released and replaced by another youth at lower pay. The state and the community thus has added to the unemployment.

On the other hand what has the trade itself done to attract the young American of today? What opportunity or protection has it offered him? What assurance has he had that he could rise above the laborer or the specialist—again finding himself out of work—while the employer has to employ a number of specialists to do the work that one man should be trained and able to do, knowing the trade in its entirety?

In our plan we offer a definite assurance of continuous employment and place the responsibility with the Joint Trade Board in each trade instead of being satisfied with placing it with an employer only. Lodging the collective effort and duty with the Joint Trade Board to see that employment is not interrupted offers far greater assurance of security to the apprentice, thereby distributing the burden over the entire trade instead of resting it only with an individual.

The general policy of the entire plan is to have the trade processes taught to the apprentice "on the job" instead of trying to house the trade conditions in a school building. He will work regularly under actual trade conditions, with actual trade surroundings and associations.

A part of his employment time or evenings will be devoted to his theoretical or technical instruction. The studies related to his trade and training in citizenship will be taught in the continuation or evening division of the public schools and will be paid for out of public funds. If, however, the proper kind of relations cannot be established with the public service through mutual partnership, then other existing educational facilities will be used or established by the crafts themselves.

Community Planning and Housing

CLARENCE S. STEIN, *Associate Editor*

One of the principal works of the Institute's Committee on Community Planning during the past year has been the development of the framework of a regional plan for the Appalachian Mountains. The readers of the JOURNAL will remember Mr. Benton MacKaye's imaginative "Project for An Appalachian Trail" which appeared in the October number. Mr. MacKaye outlined a new theme in regional planning. For the Eastern section of the country he offers the means of respite from the noise and strain of our cities. He has seen the big cities developed as working places with homes and parks as inadequate after-thoughts. He has seen the monstrous city growing and devouring the surrounding forests and farms. He offers as a tonic the big sweep of hills and plains. His is not a plan of more efficient labor, but a plan of escape. He warns us to conserve the whole stretch of the Appalachian Mountains for recreation—recreation in the biggest sense—the recreation of the spirit which is being crushed by the machinery of the modern industrial city, the spirit of fellowship and co-operation.

Mr. MacKaye's project is probably the biggest and most far-seeing undertaking in regional planning that our generation in America has known. It means more than a trail—the trail is but the backbone. It means more than a recreation ground with paths and shelter camps. It means the opportunity for the development of a new way of living, and with it new types of communities. It is one of the first constructive searchings for an escape from the crushing influences of industrialism and its overwhelming cities.

The architects have built our cities though they have not created them. The blind force of industrialism has brought them into being. The architect's ability to plan has been squandered on details:—a house—a school—a monumental city hall. The real structure—of which these form but a part—which affects all these individual buildings—has come into being without plan. The city's growth must be controlled; it must be made to serve, to broaden and deepen our lives, not to narrow and crush them. And for this purpose city planning alone will not serve—we must have regional country-wide planning.

It was this that Mr. Whitaker saw when he induced Mr. MacKaye to develop his scheme for publication in the JOURNAL—it was for this reason that the Committee on Community Planning took the lead in fostering the project for an Appalachian Trail. In co-operation with our committee and a constantly growing group of friends of the Appalachian Trail, Mr. MacKaye has been devoting the winter to a detailed study of plans. Leaders in the trail movement, in forestry, in community development, in landscape architecture in the East, have all shown a wide and helpful interest in the undertaking. They have said: "This is a wonderful plan—but what has it to do with architects and the American Institute?"

It is just because this is a plan, a big plan, that it appeals to architects. After all, the architect's prime function is not to decorate, but to plan. In planning a house or any other structure he relates varied units one to the other so that they form not only a beautiful but a functioning whole. His job is to mould our physical surroundings so that our lives may harmonize more fully with our aspirations.

But the architect's energy has been concentrated on

the details and not devoted to the essential elements of the planning of our physical environment. And so the leadership in city planning has in the main been taken by other groups—engineers, landscape architects, sociologists, philanthropists, politicians and lawyers.

The planning of communities is probably the greatest undertaking that we have before us. It is the making of the mould in which future generations will be formed. It is not the work for one group, for one profession. It must be a co-operative undertaking. But it is one in which architects, because of their training and their experience should be fitted to take a leading and not a subordinate part.

The architect and the engineer each has his essential part in the design of a city as of a building. But they are different. The architect plans what should be done to serve human needs—the engineer how to do the thing with physical matter. The engineer thinks of human beings as weights, loads, elements, to be used in production; the architect must conceive buildings and cities as makers of men. He must plan structures and towns so they will react upon and remould the character of men. The engineer counts the pedestrians and vehicles passing a given point—and, multiplying by the factor of probable growth and plan, the width and type of the future road to handle its future traffic. He studies the past growth of the city and prepares for a continued growth along the same lines by building in advance sufficient streets, transit and transportation lines. The architect must study the human beings—their needs and aspirations—and conceive a building and a city—to fit them and to help them grow.

The philosopher foresees the growth of human minds that must be supplied with new physical surroundings; the sociologist supplies the data as to human needs; the lawyer weighs the experience of the past; the statesman cuts a way by new laws through the overgrown forest of traditional restrictions; the engineer calculates each part of the plan so that it will be adequate. But it is the architect (and the landscape architect) who must conceive the plan. In doing so he works as an artist. But at the same time his interest must be a human, and a political interest. And so he needs the co-operation of all these others who are helping to relate the city to the human factor.

There has been altogether too little fundamental study of the needs of our cities. Much of the so-called planning has been the work of opportunists. There was first the craze for the "city beautiful." And then when that was seen not to pay the phrase changed to a "city useful," a city useful not necessarily to the community as a whole, but to the limited part of the community that owns property or carries on business. Now it is zoning that is being offered as the remedy of the city's ills. Other cures will come later, say the doctors, but why confuse the patient by talking of more than one at a time?

These are all palliatives. In America we have never stopped growing long enough to diagnose the disease of our cities. Until we have done so we will not be prepared to accept other forms of city growth. It is only through our own experience that we will learn. But the suggestions that come from abroad may help us to find a better way of building our cities.

Again—The Garden City Idea

So a book on the garden city by a group of men who have been intimately connected with the movement in Great Britain is welcome. "Town Theory and Practice," the joint work of six enthusiasts, is built around the definition adopted by the Garden Cities and Town Planning Association in 1919:

> "A Garden City is a town planned for industry and healthy living; of a size that makes possible a full measure of social life, but not larger; surrounded by a permanent belt of rural land; the whole of the land being in public ownership or held in trust for the community."

A different portion of this definition forms the chapter treated by W. R. Lethaby, G. L. Pepler, Raymond Unwin, Sir Theodore Chambers, and R. L. Reiss. In the introductory chapter, C. B. Purdom tells of the growth of the idea expounded in Ebenezer Howard's "Garden Cities of Tomorrow" (or "Tomorrow," the title under which it was first published in 1898) to its realization in Letchworth, a self-contained city of over ten thousand population and in the second Garden City Welwyn founded in 1919 and planned as a satellite of London but also a self-sustaining city. Mr. Purdom says of Ebenezer Howard's idea that "the firm basis of it is the unity of urban and rural interests in a single community and the ownership of the land by that community." The garden city he points out is a combination of individual, municipal and industrial effort. It is not a mere plan; it is a creative organization. Town-plans do not make towns. "Dynamic forces, the energies of men and the enterprise associated with industries, the pressure of population lured to a centre by powerful forces of attraction—these are the makers of towns. In the past, towns have grown up under the blind influence of these forces; today there is a means in the art of town-planning to replace that heedless process by conscious effort. But the art of town-planning is not a matter of adding road to road, building estate to building estate; it means the possession of an ideal, the exercise of the imagination, by those who care about towns, understand and love them, and have the power to make them what they would have them be. That is the value of the garden city to these present times."

The chapter devoted to the Best Size of a Town for Social Life, by Raymond Unwin, is particularly interesting. He does not accept Howard's original limitation of 30,000 inhabitations. He finds that no exact figure either can represent the most economical unit, the one, that is, which will give the greatest number of conveniences and opportunities to the whole population with the least expenditure of time and labor.

The limit of economical efficiency is not necessarily the same as that of social efficiency. He quotes Lord Bryce as suggesting that "the desirable size for a city would be from 50,000 to 70,000 people, and that it is doubtful whether cultural advantages of any kind will result from cities over 100,000 in population which would compensate "for the sacrifices which they must entail."

As an example of the wastefulness of the overgrown

city, he points to the experience of New York of which he says "to increase the supply of water to meet its growing population may cost four or five times as much per head as formerly was the case. Not only is this true, but the needs of the population in some cases show a high ratio of relative increase as compared with the numbers. This applies notably to passenger traffic facilities; the total number of journeys, or the average number of journeys per head of population, seem to increase in large cities faster than the square of the increase of population. Mr. John Lothrop has recently stated that while New York was increasing in population about 30 per cent, the cost of installing traffic facilities increased about 400 per cent. There are other facilities—the telephone is perhaps the most obvious—in which the increased population necessarily so complicates a system that the cost per head tends to increase with the increased population." He recognizes that the increased size of population does enhance the opportunity of gain to fortunate business men and others but he says "it is, however, by no means clear that the increase of economic or financial opportunity to these individuals applies to the population generally; and, to some extent at least, the general population is probably bearing the cost of the increase of size beyond the most economic unit, while the advantages of that increase are going mainly to a limited number of successful traders."

Mr. R. L. Reiss in the last chapter of the book points out the practical value "of the whole of the land being in public ownership or held in trust for the community" because

"(*a*) It is then possible to prepare a comprehensive plan for the whole area.

"(*b*) In considering that plan, any reduction in the potential land value which may be brought about by restricting a particular area to agricultural purposes only may be counterbalanced by the increases in value due to having restricted factory or residential areas.

"(*c*) The limitations in value due to land being used for open spaces or recreation purposes only may be balanced by the increases in value of the sites facing such land."

In a word, the creation of land values will be in one hand. But it is not sufficient that the land should be in one ownership. The monopoly thus created must be used to public advantage. The predominating consideration in the preparation and carrying out of a town plan must be the interests of the town rather than the profit of individuals. Moreover, the excess of land values created over and above the amount required to cover the interest upon the capital cost of development must be used for the benefit of the town as a whole.

Bibliography

A seven page review of City Planning in the United States 1920-1921, from the pen of the indefatigable librarian of the School of Landscape Architecture, Harvard University, has come to hand. Miss Kimball lists the names of many towns and cities that have plans under way, but far too many are merely major street plans, re-arrangements of railroads or zoning. All these are meaningless without comprehensive plans. Of general city planning Miss Kimball lists only six (one of which is Canada). This is a poor showing as compared with the hundred or so cities that have zoning plans started, under way, or almost completed.

The National Fine Arts Commission

President Harding, in forwarding the Ninth Report of the National Fine Arts Commission to the Congress, does so in a most graceful and appreciative letter, printed at the beginning of the Report, which contains a History of the origin of the idea of such a Commission and also a summary of its activities since its legal birth in 1910; the latter are well illustrated.

Primarily this Commission was intended to act as an advisory board of experts on matters affecting the future growth of the Nation's Capital. Its work in this field has long since proven the wisdom of its creators. Without its influence Washington and the District of Columbia might have gone on and on, straying each year further and further away from the original conception of its creators, Major L'Enfant—in consultation with George Washington.

Thanks to McKim, Burnham, St. Gaudens, Olmsted, and their successors, the National Fine Arts Commission has made good and every one now knows what its future must be unless Congress, which is Lord and Master of the Federal City, sees fit to fly in the face of the best artistic advice that can be had, and ignores it entirely.

Since the time when the Commission was quite young and its advice sought on matters concerning Washington only, much water has passed over the dam. Now the best elements in the Government appreciate it and seek its advice in every field covered by its diversified artistic membership.

It has given splendid advice on our new coinage, our memorials of all sorts, our medals, statues, fountains and a great variety of other things that require mature, trained professional judgment.

The mere fact that its advice is sought and followed, as to the location, planning, landscaping, and placing of suitable memorials in our cemeteries overseas in France and England, is proof to the world and to ourselves that we can, and do, appreciate the best. These cemeteries will be as simple and as dignified as it is humanly possible to make them.

It is greatly to be regretted that just now there is a small but well organized effort on the part of some in the Congress to defeat the will of the people, by depriving this valuable advisory adjunct of the Government of the United States of its very life blood—the minimum amount of money absolutely necessary for its continued functioning, namely the sum of $10,000.

We, who know the immense power for good which it is, must use every effort, politically and otherwise, to see that its sustenance is not shut off, and the commission permitted to die from inanition.

EDWARD W. DONN, JR.

The Knickerbocker Theatre Disaster

REPORT OF THE WASHINGTON, D. C., CHAPTER COMMITTEE

The Committee was authorized by the Chapter to make plans of the building, in order to have accurate data on which to base the relation of the roof steel to the walls, there being considerable doubt, according to testimony given, whether beams, trusses, etc., had proper bearings. The Committee obtained all the plans and specifications from the Building Inspector's Office, which plans and specifications were available for one day only, Sunday, 5 February. The plans were traced by members of the Chapter and were made the basis on which measurements taken at the building were placed. Without the use of proper instruments it was found difficult to make dependable drawings from measurements taken with tapes only, and your Committee then obtained the services of Mr. Hazen, City Surveyor, who delegated Mr. Latimer and three or four assistant engineers to make surveys to get accurate and definite information of the existing conditions.

This information was finally turned over to members of the Committee who were doing the drawing, on Wednesday night, 15 February. From this time on the drawings proceeded rapidly and are now completed ready for such disposition as the Chapter may wish to make.

The plans submitted herewith consist of first floor, balcony, and steel framing plan of roof. In order to be as accurate as possible all measurements were taken at the floor line and it has been assumed that the walls were plumb at the beginning.

In locating truss 11, however, on the Columbia Road wall it appears on the drawing to have more bearing than is known to exist at the building. This is due to the fact that all measurements were taken at the bottom of the wall at the level of the auditorium floor and carried up plumb. By computation it has been found that the inside face of the bearing beam on which truss 11 rested, at the center line of the truss, is practically 5 inches back of this plumb line, showing that at the bearing of truss 11 the wall probably leaned toward Columbia Road at the time it was built.

Truss 11 was not at right angles with trusses 12, 13 and 14, the angle being about 90.23 degrees. This slight variation may have been made to get more bearing for truss 11.

The beams directly over the orchestra resting on the proscenium arch and the Columbia Road wall, from the measurements taken, also appear to have been too short. Beam 20 according to the length given in the beam schedule was not long enough. It may have been swung around until it rested on the Columbia Road wall but we have been unable to find any indication of a bearing plate for it. Beam 21 was also short and was swung around to rest on the Columbia Road wall. Beam 22 was so short that it was swung considerably out of normal to rest on the proscenium arch wall. The condition due to the spreading of these beams makes the panel between beams 21 and 22, 10′ 0″ wide at the connection to the truss 12, and 11′ 6″ at wall. Beams 23 and 24 were also swung out of position to get bearing at the proscenium arch wall. The approximate location of the fans are indicated by dotted lines on the framing.

Your Committee has made several personal investigations of the ruins, condition of walls, bearing plates, and various structural members forming the roof construction; they have had computations made of the various loads and have analyzed the effect of these loads on the various beams, trusses and concrete roof slab.

In general, the Committee finds that the roof construction was poorly designed, that it was so faulty in its entirety, that the partial collapse of any part of the structure would in turn produce conditions which would bring about the collapse of the entire roof. This feature of the design is, in our opinion, fundamentally wrong, as no structure should be so inter-dependent, that the breaking of one portion produces the collapse of the whole. To make matters worse, a great many members of the roof framing were greatly over-stressed, producing conditions which made the total collapse inevitable, it being only necessary for a slight overloading, due to snow or some severe shock, to precipitate the entire structure into the auditorium.

As to the immediate cause of the failure, there are so many evidences of weakness, so many faulty details of design such as over-stressed members of trusses, beams, columns, etc., so many poor connections that, in our opinion, they all contributed their share in producing the final collapse. Truss 11, the main supporting truss, had one end resting on column 2, the other resting on an 18″ 48-lb. I beam, having a bearing on the Columbia Road wall of 8 feet. This truss was connected to column 2 by bolting the bottom flange of the truss to four angles at top of column. There was no bearing plate and top of column was not milled to give level bearing. The other, or Columbia Road end, was so badly designed that it undoubtedly was a large contributing factor in the general failure.

The wall bearing end of this truss was also without a bearing plate, the bearing being made directly by the bottom flanges of the bottom chord, namely, by two 12″ channels, 20½ lbs., connected by a ½″ gusset plate. The bottom edge of this gusset plate is 1″ above bottom flanges of channels. The wall reaction at this point was so great that the channels forming the bottom chord spread, thereby causing a considerable bending stress in the web of the channel which was only ¼″ thick. The gusset plate was so greatly over-stressed that failure at this point was a great possibility.

The system of trusses was stayed laterally only at the top chord by the roof beams or purlins and the concrete roof slab. No braces were provided to tie the bottom chords of these trusses.

Column 2 was very poorly braced and while there is no evidence of buckling or bending under its load, there was nothing to prevent it toppling over when the roof started to collapse. The roof beams resting on the

proscenium arch had very little bearing and slipped from their plates without doing serious damage to the walls.

It appears by the testimony at the coroner's inquest, that the entire design of roof framing was changed. The designing was placed in the hands of the steel contractor. The practice of permitting the steel contractor executing the steel contract to design the steel work, your Committee feels, is an extremely dangerous practice and should not be permitted under any circumstances as he has a financial interest in all that is done. The Architect's specification requires the contractor to submit all structural detail drawings in duplicate for his approval together with such stress sheets or calculations as he may require. The question naturally arises,—did the architect insist upon these drawings, did he examine and check them himself or did he obtain the services of a competent engineer to do so? A cursory examination shows that the system of construction provided was inadequate to carry the dead load plus the live load as provided by the Building Regulations.

That the work did not have proper inspection is apparent from the evidence submitted at the Inquest. This Committee recommends that the Building Regulations be amended making it imperative with the owner, where the public safety is affected, to employ at his expense, a competent clerk of the work constantly on the building during its construction and acting under the direction of the architect. The duties of such a clerk being thoroughly to check all materials delivered with all contract drawings, specifications, approved shop drawings and schedules, as well as conformity of workmanship with the specification requirements. Had such been the case here, the checking of drawings with finished trusses would have disclosed the discrepancies of depth and length as well as the methods of fabrication and erection. The Building Regulations should be modified so as to compel the owner to provide, at his expense, for inspection of this character. This seems fundamental to the architect but to the layman it is often considered a burden which is to be avoided if possible. The office of the Building Inspector should not be required to maintain a force of inspectors sufficiently large to provide proper inspection of all building operations of the District. This is an entirely unnecessary expense, which expense is not borne by those receiving the benefit as there is no reason why Mr. A, B, or C, should be required to pay, in the form of taxes, for inspecting work done by D. The Building Inspector's Office should have a force of competent and thoroughly trained engineers who should pass upon structural features of the design and see that they comply with the general established safe practice and the building laws. But the detailed inspection of the carrying out the plans should be provided by the architect and paid for by the owner. Such inspection to be paid out of the usual percentage or such additional charges of the architect as may be arranged with the owner. The burden will then be borne by the owner and not the public. In general, the builder's responsibility should be the proper execution of the contract requirements. His bid is based on the various items called for and he is required to execute the work in conformity with the plans and specifications. He should not be held responsible for any architectural or structural feature of the design as his financial responsibility is covered by the detailed requirements of the specifications as furnished by the architect. It is the architect's duty to himself and his client to see that these requirements are complied with by the builder.

The practice of architecture should also be regulated in this respect. Architects without adequate training, draftsmen without any training at all, should not be permitted to practice. The public is paying continually for improper and inadequate advice from men without proper training and experience. The Chapter should press with vigor the measure now before Congress providing for the registration of architects. Why should an architect be permitted to practice without proper education any more than a doctor or lawyer; even a plumber is required to pass an examination. The architect has the life, health and comfort of his client to provide for in much the same way as a doctor and in addition he has the financial advantage or disadvantage of his client to consider.

We recommend that one set of blue print copies of the drawings of the reconstructed building be presented to each official investigating committee or engineer and one copy of this report be sent to the District Attorney for his use in the prosecution of the case.

ALBERT L. HARRIS, *Chairman.*
E. W. DONN, JR.
F. G. PIERSON.
Committee.

Letters to the Editor

FREE ENGINEERING SERVICE

SIR:

Not long ago I received the following letter:

Mr. W. L. Steele,
Sioux City, Ia.

DEAR SIR:

Structural Steel is selling now at 50 per cent lower prices than last year and at practically the same level as before the war. Every indication is that steel can be bought cheaper right now than will be possible for a long time to come.

These exceedingly low prices make it possible to build with Structural Steel at a cost competitive with any other type of fireproof construction.

Our Engineering Department will design your Fireproof Construction at no cost to yourself. If you have any contemplated *work* on hand, *NOW* is the time to start it.

Send us your inquiries and preliminary sketches.

Yours very truly,

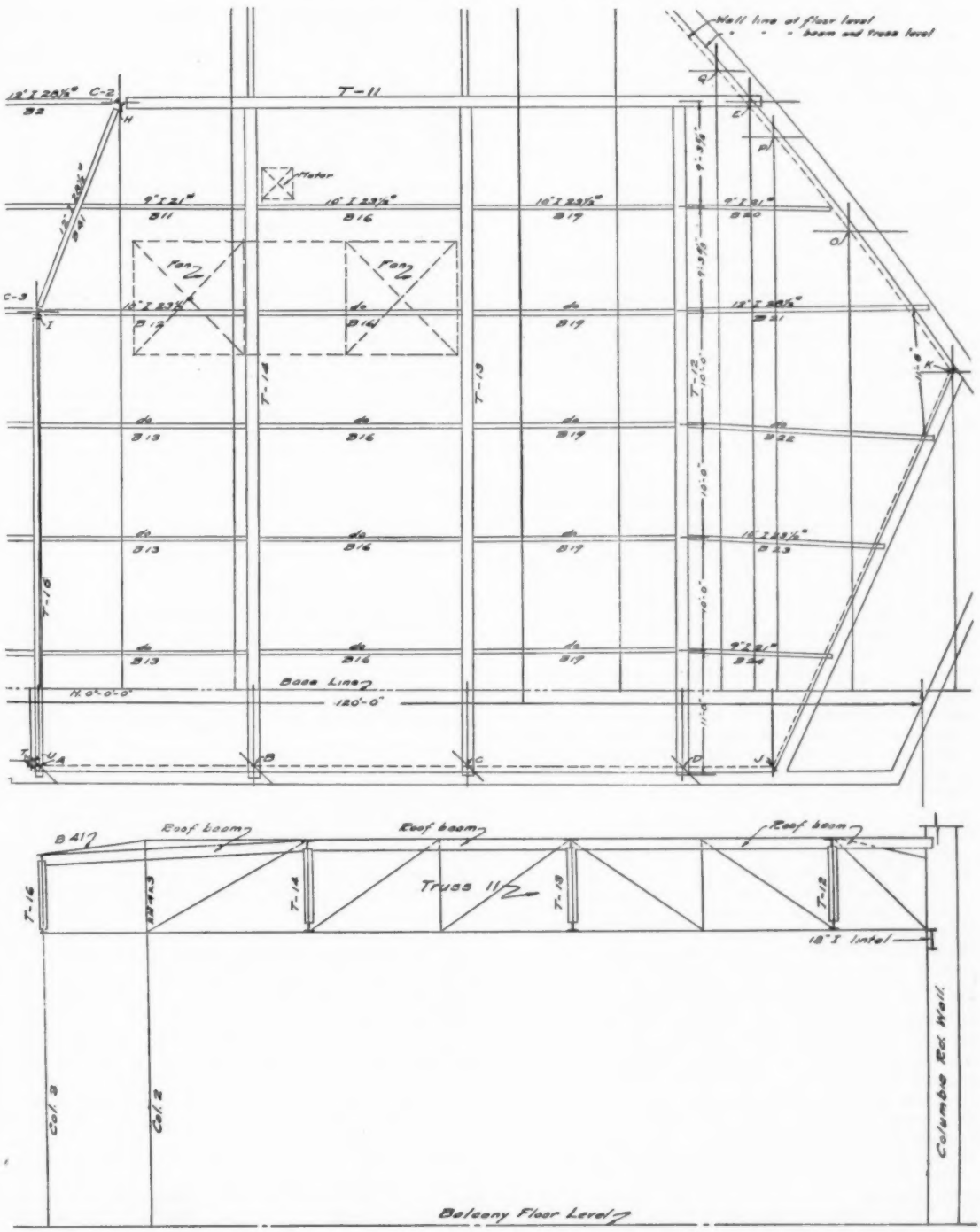
—— STEEL WORKS.

To it I replied as follows:

—— Steel Works,

GENTLEMEN:

Replying to yours of October 29th, permit me to say that your statement that your engineering department will design fireproof construction for architects without charge does not appeal to me, nor should it appeal to any architect who has any respect for himself or his clients. I really believe that such help as you extend does more to keep incompetent men practicing architecture than any other one thing, and



ELEVATION OF MAIN TRUSS
Looking West
Scale: 3/8"=1'-0"

Details of Section of Roof Framing—Knickerbocker Theatre, Washington, D. C. Referred to in Accompanying Report of Washington Chapter.

I wish high-grade firms like yours would be brought to see the necessity for insisting that architects pay for the favors which they receive. Engineering service is a very vital part of construction and if an architect is properly paid he will never permit this work to be done for nothing unless he is dishonest.

Yours very truly,

WM. L. STEELE.

This was the answer I received:

Wm. L. Steele, Architect,
Sioux City, Iowa.

DEAR SIR:

I have your letter of November 2nd in which you object to our offering the services of our Engineering Department without charge for the purpose of designing structural steel.

I note you state you believe that practices of this kind do more to keep incompetent men in architecture than anything else, and I am sure you are absolutely right in your contention, and you can be sure that we would very much prefer *not* to offer our services in this way.

We would prefer to furnish our products according to the design and under the direction of a competent architect than to be compelled to act in the capacity of an engineering adviser. . . .

The —— Steel Works will be only too glad to stop designing structures for prospective builders when the interests play the game fairly and honestly. The use of structural steel and reinforced concrete in building construction should be governed by rules and building codes, absolutely fair to both systems. This is a matter that I think the architects should take up themselves. They can be sure that they will have the heartiest support and help of all the structural steel shops.

Yours truly,

—— STEEL WORKS.

To this I replied that I would endeavor to bring the situation to the attention not only of my chapter but the Institute as well, which, as its members all know, has frankly condemned the practice so glaringly revealed and explained in the correspondence here submitted.

Sioux City, Iowa, 15 March, 1922. WM. L. STEELE.

A QUESTION OF SMALL HOUSES

To the Editor of THE JOURNAL:

SIR: In the February issue Miss Georgiana Goddard King criticises a group of workmen's cottages at Williamsport, Pennsylvania, designed by the late Mr. George S. Welsh of Wilkes-Barre. My connection with this group was of the very slightest but in justice to Mr. Welsh's memory I cannot refrain from writing you.

The writer's statements of fact are in most cases untrue. Her assumptions are usually incorrect. That the houses are not as a whole occupied by factory workers is true. They were as a matter of fact designed for factory houses and were sold at an average price of less than $2,800, with six rooms, a cellar, a bathroom with proper plumbing, and good heat and electric light, with slate roof, terra cotta exterior walls covered with stucco. The rents at the time of their construction ran from $12 to $22 a month.

The writer says the windows are very small and sunk deep in a thick wall. The average thickness of the wall is 8″. The windows average about 3′x4′ 6″. The sash are of the casement type so that full openings can be obtained. Miss King says that in hot weather the bedrooms were suffocating. The least headroom in any bedroom is 6′; the casement sash make adequate ventilation possible; if the windows are kept shut the rooms may be hot.

She says that the detail of the house is bad. "The pretty casements were so arranged that no wire netting could be adjusted." This is not true. The frames are rabbeted for screens. She speaks of "sham carving" on the interior woodwork. This is not true. All interior trim was simple one-piece run molded trim, which was, in my opinion, extremely well designed and fitted to its purpose.

She speaks of lack of privacy downstairs as a great discomfort. The houses were designed first for the utmost economy of space, and second, to meet the desires of the tenants as ascertained from questioning a number of those who were to occupy the premises, and with the estate agents who rent property. The room in the roof of which she speaks as plastered but not heated is storage space. She says that when the door is opened the house is chilled throughout. She was there in summer time. The porches are designed for glass enclosures in the winter.

I cannot tell you when I have seen an article in which so little justice was done to the architect as in this one. Mr. Welsh was a pioneer in housing. His houses were the most economical that I have ever seen; were planned with as much care and consideration as I give to very much more expensive residences, and how on earth he was able to build such good houses at such low cost, I cannot understand. I hope you will publish this letter and communicate its contents to Miss King. AYMAR EMBURY II.

New York City.

MISS KING'S REPLY

To the Editor of THE JOURNAL:

SIR: I have just read Mr. Embury's letter and I am very sorry he should have been so annoyed. I think, however, he hardly did justice to the praise in my article. I said, I think, that the houses were enchantingly pretty outside, and the streets picturesque and charming. Whatever the rents for which they were designed, those are not the rents now paid, which no factory worker could afford. This I deplored, citing parallels elsewhere. It is deplorable.

The windows *are* small; every picture shows that. Casement windows (except true French windows that open inward back against the wall) are unpractical and hot, for they necessarily cut off the wind from one direction; the plans show that. When in pairs they cut off the wind both ways. The rod of the window fixtures made screens impossible; that was said to me and I verified it on the spot. There are fixtures that accommodate screens, but not here.

The heat in the bedrooms and cold from the front door were the complaint of a resident. I observed the former and could not doubt the latter. Factory workers cannot afford a glazed porch; and some people do not fancy one. The third-story room without heat has to be counted in the "six rooms and bath." The moulding of the door-frames seems to me fussy and bad in profile; it certainly had corner ornaments that had shrunk away at the joints. That is, unfortunately, all I can remember nine months later.

The lack of privacy is common, as Mr. Embury implies, to poor people's houses and those of his own clients. I think I said something about that; but I think it a great misfortune and said (in part) why. The scheme is rather like the fashion of high-heeled slippers in the street, which those who cannot afford it have copied from those who can and who ought to know better; but it is bad just the same.

The article was not about any architect but about houses. It really was true.

G. G. KING.

Bryn Mawr, Pa.

LETTERS TO THE EDITOR

From Our Book Shelf

Sculpture

Mr. Kineton Parkes cannot be blamed for the sculpture of today, but when you have finished his two[1] volumes and looked at all the illustrations, it is a pity there is not just one head you can off with and be done.

Mr. Parkes knows what sculpture is about and it is not his fault that smooth clay models of so many sweet and noble ladies, their hair beautifully done up with many hair pins are called Sculpture today, as well as a few days ago.

We find ourselves in violent disagreement with some of his opinions and much he praises, and have not full sympathy with so catholic a taste. He has spread over the surface of a very large field and produced rather a remarkable "Who is Who," but while he has touched the real alive forward movement here and there, he has illustrated it hardly at all.

ESTELLE RUMBOLD KOHN.

Geometry

Geometry, as certainly must already have been remarked, is a rather useful equipment in the practice of architecture. It simplifies and makes easy a good many things. Not content with this, however, a number of inquiring minds seem to insist that great architecture develops by geometrical process. In the cosmic sense, this is very likely so. The laws of space teach us a sense of harmony and proportion. But that a knowledge of these laws reduced to a geometrical basis will assist in the production of great architecture is at least open to serious doubt.

Mr. Frederik Macody Lund has applied certain geometrical theories to the cathedral of Nidaros, Trondhjem, Norway. Apparently they are considered so important that his work[2] has been published by order of the Norwegian government, which leaves us exactly where we were before. The facades of Nidaros and of other well known churches are overlaid with a series of straight and curved lines purporting to prove Mr. Lund's conclusions. If they are proof then all is over, of course, but in the drawing of these lines the author seems to have had a curiously child-like predilection for making them begin and end at points exceptionally favorable to his own conclusions. Also, he seems totally to have ignored the long process of trial and error, of experiment, of patching and altering, by which most of the medieval churches attained structural solidity. There are eighty-seven ways more or less of making an architect. We would suggest trying the other eighty-six first.

C. H. W.

[1] SCULPTURE OF TODAY. By KINETON PARKES. Universal Art Series, Edited by Frederick Marriott. Published by Charles Scribner's Sons, 2 Vols. $8.50. Volume I, America, Great Britain, Japan; Volume II, Continent of Europe.

[2] AD QUADRATUM. A Study of the Geometrical Bases of Classic and Mediæval Religious Architecture, with special reference to their application in the Restoration of the Cathedral of Nidaros (Trondhjem), Norway. By FREDERIK MACODY LUND. [London: B. T. Batsford.]

News Notes

MESSRS. ADDEN & PARKER announce the removal of their offices to 177 State Street, Boston, Mass.

MESSRS. BEACHAM & LEGRAND announce the removal of their offices to No. 211 Bruce Building, North Street, Greenville, S. C.

THE Executive Committee of the Board of Directors of the Institute met at New York City on 31 March and 1 April. The minutes of the meeting will be issued as a supplement to the May JOURNAL.

FOR the remainder of the unexpired term of office rendered vacant by the resignation of Sir Charles T. Ruthen, the Society of Architects have co-opted Mr. Edwin J. Sadgrove who was president of the Society 1916-20.

HEADS of the various architectural departments and schools in the Association of Collegiate Schools of Architecture have been advised that the Institute's Medals for general excellence in architecture throughout the course will be ready by the first of May. One medal is awarded in each school wherever a recommendation is received, and the recipient is likewise presented with a copy of Henry Adams's "Mont St. Michel and Chartres."

ZONING in Omaha, Nebraska, appears to be of doubtful utility. Reports recently received indicate that the law was so badly drawn as to disincline the district attorney to attempt to secure its enforcement and property owners in residential districts desirous of safeguarding their holdings are being forced to buy up vacant lands in order to prevent objectionable building undertakings.

PLANS for zoning Chicago are well under way, the Zoning Commission having retained Mr. E. H. Bennett as director. An accurate map of the city has been completed and the field survey of the use, height and depreciation of buildings is 52 per cent done, the other work of record, checking, density computation being likewise well along.

PORTLAND, Oregon, reports, through Mr. Ellis F. Lawrence, the organization of a branch of the Congress of the Building Industry. This is encouraging evidence of the slow drift toward localized activities rather than unwieldy national incoherencies. The futility of national conferences and meetings with which the country has been deluged for months is becoming a pretty well recognized phenomenon. Our business and economic troubles, like our charity, begin at home and only as local groups acquire knowledge and become ready to study and deal with their own particular problems shall we be likely to make much headway.

THAT the Chapters of the Institute in New York State, the New York Society of Architects, and the New York State Association of Architects, join in the employment of a legal expert to investigate and study legislation affecting the profession and introduced in the State Legislature, was the suggestion of Mr. Hobart P.

Upjohn, made at the annual meeting of the New York State Association of Architects held in New York City in February. Considerable legislative activity has recently occurred in New York State and the Knickerbocker Theatre disaster in Washington seems to have inspired a good many hasty and unwise suggestions. Likewise the subject of registration is bound to occupy an increasingly prominent position. National registration of architects has been suggested and although such a condition would seem entirely at variance with our theory of States Rights the intrusion of Federal regulation seems now too fixed a policy to arouse serious challenge. Altogether it is quite likely that architects throughout the country will have to keep a weather eye on their law-making bodies.

MESSRS. BARRY FAULKNER AND PAUL MANSHIP have been appointed annual professors for the academic year 1922-23 in the School of Fine Arts at the American Academy in Rome.

Obituary

Henry Martyn Congdon

Elected to the Institute as a Fellow in 1867.

Died at New York, 28 February, 1922.

Henry Martyn Congdon, a former Secretary of the Institute, was born 10 May, 1834. He was graduated from Columbia College in the class of 1854 and was a member of Psi Upsilon. His father, Charles Congdon, of Brooklyn, N. Y., was keenly interested in architecture and the church and was one of the founders of the now defunct Ecclesiological Society in this country. It was natural, then, that his oldest son should look with interest on architecture as a life-work.

He was accordingly apprenticed to John Priest, M.A., of Newburgh, a friend of Charles Congdon and a fellow member of the Ecclesiological Society, and on the death of Mr. Priest in 1859 Henry M. Congdon and John Littell, fellow students, opened an office for the practice of architecture in New York City. The partnership was a brief one, and was later followed by one with Cady, but the greater part of Mr. Congdon's 63 years of practice were spent without a partner. In 1907 his son, Herbert Wheaton Congdon, M.A., was admitted to partnership and father and son worked together until death separated them.

An early member of the American Institute of Architects in the days of small things, he was a Fellow and for a short time its secretary. Although always keenly interested in its work, of late years he kept very much to himself and was not known at conventions and meetings as in the earlier days.

Some of Mr. Congdon's more prominent works were: St. Andrew's Church, Harlem; The House of Mercy at Inwood; St. Mary's Free Hospital for Children (all in New York City); Trinity Church, Torrington; Christ Church, Ansonia, and Trinity Church in Portland, Connecticut—all three being groups with attached parish houses—Christ Church, Portsmouth, N. H., Calvary Church, Summit, N. J., St. Paul's Church at Norwalk, Ohio, and St. Paul's Church, Philipsburg, Pa. He also did a great deal of minor architecture, church plate, monuments, etc., as well as the usual grist of dwellings, all of which, however simple, showed a sincerity and a picturesque charm of composition.

Mr. Congdon never retired, but was at his office until his death. He fell asleep, literally, while dressing to go to the office as usual, in his 88th year, on 28 February, 1922.

H. W. C.

Henry T. Pratt

Elected to the Institute in 1919.

Died at Kennebunk, Maine, 22 February, 1922.

"In the death of Henry Turner Pratt the Boston Society of Architects loses a valued member. Mr. Pratt died after a brief illness; his health had been poor for some time. A draughtsman of unusual ability and an architect of distinction, he had practiced his profession in Boston for the last ten years. He was the architect for a number of dignified and well-designed smaller commercial buildings, as well as of some very charming residential work in and around Boston. His early training began here about 1885, where for a number of years he was an assistant in some of the foremost offices. For awhile he worked in Southern California, gaining additional experience, and building up his health, which was not robust as a young man. He was a member of the office of the architects in charge of the Chicago World's Fair, 1892-1893, where he left his impress on a number of the more prominent buildings, and was one of a group of brilliant young designers and draughtsmen who were gathered together in Chicago at that time from all parts of the country. On his return to Boston, he was an important member of Mr. Edmund M. Wheelwright's office staff when the latter was city architect. Later on he spent a number of years in the office of the supervising architect of the Treasury Department at Washington, where he had charge of designing a number of important federal buildings, and his work there is well-known and still remembered.

"He had a great many friends in and out of his profession and was noted for the careful and painstaking study he gave to his designs. He was the author of many charming sketches made in this country and in various parts of Europe.

"He was one of the first members of the Boston Architectural Club and took a prominent part in its early activities, where his sunny personality and exuberant spirits made him universally popular. Of an extremely modest and retiring nature, Mr. Pratt hardly asserted himself sufficiently for the advancement that his talents merited. Perhaps that was one of the reasons we all loved him so well. He leaves a place that will not be easily filled, and his memory will be cherished by many.

"It is resolved that this notice be spread on the records of the Boston Society of Architects and copies sent to the Journal of the American Institute of Architects and to the family of the deceased."

Structural Service Department

SULLIVAN W. JONES, *Associate Editor*
LEROY E. KERN, *Assistant*

In connection with the work of the Committee on Structural Service of the American Institute of Architects and in collaboration with other professional societies and organized bodies having the same objective—improvement in building materials and methods and better shelter for humanity in all its manifold vocations and avocations.

Government and Industry Co-operate in Standardization. At the request of Hon. Herbert C. Hoover, Secretary of Commerce, the American Engineering Standards Committee has designated Mr. A. A. Stevenson, the retiring chairman of the committee, as a special representative to work with the department in the co-operation between the Department's Division of Simplified Practice and the American Engineering Standards Committee.

The Division of Simplified Practice is a co-ordinating unit of the Department of Commerce assisting in those reductions of excessive variety and other simplifications which many industries are undertaking in order to decrease the cost of production and distribution of manufactured articles. The work of the division was organized in the latter part of 1921 and is now actively under way.

The American Engineering Standards Committee, which serves as a national clearing house for a broad field of engineering and industrial standardization, has offered Secretary Hoover the use of its machinery in carrying out the detailed work on technical projects initiated in the simplification program of the Department of Commerce. The committee hopes to be of great value to Mr. Hoover in this simplification program of the department. It was as a result of this hope that the designation of Mr. Stevenson as a representative came about.

The American Engineering Standards Committee has been actively at work somewhat over two years, during which time it has brought about a large measure of industry-wide co-operation. In this work more than a hundred national organizations are participating through representatives officially designated by them. The formulation of the standard for each specific project is in the hands of a working committee made up of representatives officially designated by the various bodies concerned. Eighteen standards have received formal approval as nationally recognized standards, and work on more than sixty other projects is in various stages of development. The American Engineering Standards Committee is maintained jointly by twenty-nine national organizations, including five departments of the Federal Government, nine national engineering societies, and fifteen national industrial associations.

There are now similar national industrial standardizing bodies in thirteen foreign countries, all but one of which were formed during or since the war. Of these the British and the German work is the most extensive, but active and important work is going forward in other countries.

Mr. Stevenson, who is a past president of the American Society for Testing Materials and has had a most extensive experience in standardization work, is vice-president in charge of manufacture of the Standard Steel Works Company, which is a subsidiary of the Baldwin Locomotive Works.

Committee Activities

Glass and Glazing. (2g)—In the March, 1922, issue of the JOURNAL reference was made to the work of the U. S. Bureau of Standards Conference Committee on Glass and Glazing. The Sub-Committee on Classification and Nomenclature met on March 6th at the Bureau of Standards and tentatively established for sheet glass the following classifications or grades: "A" and "B." The familiar "AA" quality in single and double strength glass was abolished because it was found that only about 2 per cent of the sheet glass produced is strictly "AA" quality. It is "A Special," and is furnished—when it is furnished—by the glass jobber, through making a selection from his "A" stock. "C" quality was omitted because this quality is consumed in agricultural glazing (hot house sash and the like) in glazing barn sash and sash for cellar and other windows in the cheapest class of shacks. It is never specified in connection with better construction.

Tests are being made on a large number of sheets of glass to determine the maximum safe dimensions for single and double thick lights.

American Engineering Standards Committee.—Under the procedure of A.E.S.C. the A.I.A. is at present represented through the Committee on Structural Service on the following Sectional Committees: Building Exits Code, Safety Code for Elevators, Elevator Standardization, Gas Safety Code, Floor Loads for School Buildings, Safety Code for Floor Openings, Railings and Toe Boards and Electrical Symbols.

The A.I.A. is one of the joint sponsors for the Elevator Safety Code, for Elevator Standardization and for Electrical Symbols.

Other projects which will be shortly organized to go forward under the A.E.S.C. procedure, in which the Institute will be represented are: standard methods for testing wood, standard indications for structural materials.

Abstracts

It is the purpose of the Structural Service Committee and THE JOURNAL *jointly to give in this division each month, brief abstracts of all publications by the Government Departments and Bureaus, University and other research laboratories, States and Associations, which contain fresh information in regard to materials or methods employed in construction and thus afford architects and others a convenient means of keeping themselves conversant with rapidly expanding knowledge in the technique of construction.*

Water Heating in the Home. (29d2). (*Kansas State Agricultural College. Engineering Experiment Station. Bulletin No.* 11, *by R. G. Klaeffler. Pages* 76. *Size* 6" x 9".) The object of this investigation by the Engineering Experiment Station was to determine the following factors in connection with the use of coal, kerosene, gasoline, gas and electricty for heating water; the cost of operation, both for supplying hot water continuously and for furnishing hot water for a single definite purpose; the care necessary to operate the heater; the quantity of water which will be given a definite rise in temperature per hour; the practical efficiency of the combined heater and its attached tank.

A great difference of opinion exists regarding the efficiencies of hot water heaters. Each manufacturer has his own particular method of determining this value. The aim in this work has been to obtain a typical method for comparing water heating systems using different fuels, and not to show that one particular make of heater is more efficient than another. All water heaters were tested in a similar manner wherever possible.

Standards Chosen for Comparison.—In order to compare the various kinds of water heaters it has been necessary to arbitrarily adopt certain standards. These standards are: a standard quantity of water and temperature for rating water heaters; a standard quantity of water and temperature rise for specific domestic uses; a standard daily hot-water consumption in homes.

The temperature of water in underground pipes varies from 40 degrees F. to 70 degrees F. An average value would probably be 60 degrees F. A desirable temperature for bathing purposes is around 105 degrees F., for dish washing 110 degrees to 150 degrees is used, the higher value being recommended by the best authorities. However, 120 degrees F. (a 60-degree F. raise in average temperature of the water) might well be chosen as an average value for dish washing since it is about the maximum temperature the hand will permit. The most commonly used unit of quantity of water is a gallon. The following units were, therefore, adopted as standard:

Standard Unit for Rating.—One gallon of water given a temperature rise of 60 degrees F. in one hour. This unit did not meet with the favor of the manufacturers of electric water heaters, owing to the special characteristics of electric heaters. They were thoroughly justified in their opposition; but for the work of this investigation their objections were waived.

Standard Unit for Baths.—10 gallons of water at 100 degrees F. The data collected indicated that an average of nine gallons of water at 97 degrees F. was required for bathing in the ordinary bath tub. Shower baths required the same temperature, but only one-half the quantity.

Standard Unit for Washing Dishes.—1½ gallons of water at 135 degrees F. A series of tests showed that an average of 1¼ gallons of water at 132 degrees F. was necessary for washing dishes. An electric dish-washing machine required 4 gallons of water at 207 degrees F.

Standard Unit for Washing Clothes.—18 gallons of water at 160 degrees F. The amount and temperature of water for washing clothes is a variable quantity, depending on the size of the family, and whether a mechanical washing machine or hand work is employed. Washing machines require from 9 to 12 gallons of water. For best results this water should be at 180 degrees F. or higher. However, the temperature generally used is about 160 degrees F. For washing clothes by hand the quantity of water in the tub is less and the temperature lower, but about 7 gallons of boiling water is frequently used in a boiler, which makes the total heat required about 50 per cent more than with the washing machine.

Average Daily Hot Water Requirement.—From the data collected it appeared that the average daily hot water requirement per individual is ten gallons of water raised 60 degrees F. in temperature. The maximum daily requirement is about double the average.

Coal Water Heaters.—The coal water heaters tested were of the laundry stove type. The heaters were placed near and directly connected to an uncovered 30-gallon range boiler. The grate areas were 8″, 10″ and 12″ in diameter.

Kerosene Water Heaters.—The kerosene water heaters tested were equipped with wick burners similar to those on kerosene cooking stoves. Above these burners are placed copper coils. Both single- and two-burner types were included. Since the kerosene water heater does not heat the water so rapidly as the coal heater there is a tendency for the water to circulate and the whole tank to become more uniformly heated. A small fraction of a tank of hot water rather than a large quantity of luke-warm water is usually required and this can be secured in a minimum time by placing a valve above the kerosene heater and restricting circulation.

Gasolene Water Heaters.—These consist of a burner underneath a copper coil. The burner is similar to the burner used on gas stoves.

Gas Water Heaters.—Gas water heaters on the market today are of three general types: circulation, automatic and instantaneous.

The circulation water heater generally consists of a copper helical coil mounted in a chamber above a gas burner.

The automatic gas heater consists of a heater combined with a storage tank, the flow of gas being automatically controlled by a thermostat. When the water supply cools below a certain temperature the gas is automatically turned on. When the storage system is heated to the desired temperature the gas is automatically turned off.

The instantaneous gas heaters are heaters having a large capacity and are capable of heating water as fast as it flows from the pipes. No tests upon instantaneous gas heaters are included in this work.

Electric Water Heaters.—Electric water heaters may be classed, first, according to the manner or place in which they impart their energy to the hot water system; or, second, according to the manner in which the heat is produced. Under the first classification is the circulation type (similar to the fuel heaters already described), immersion or insert type, plaster type and the instantaneous type.

In the second general classification electric heaters may be divided into the resistance type, induction type and carbon electrode type. In the resistance type the heat is produced by the electric current flowing through a conductor. In the induction type by transformer action a large flux is set up in an iron core, producing energy losses in the iron which appear in the form of heat. In the carbon electrode type, the electric current flows out directly through the water from one carbon electrode to another and this heats the water.

All the fuels used in hot water service contain heat energy, which is made available through combustion. Coal, kerosene, gasoline and gas may be stored in large quantities, and little importance may be attached to the rate at which they are consumed, so long as the total amount used is not increased. However, the case of electric energy is very different. It cannot be stored economically for large power consumption. It is produced by generating machines just as it is used. Hence, the amount that can be used in a given time (the rate of consumption) is limited by the capacities of the generating machines and the distribution systems, including transformers. Thus, electric water heaters are designed to heat the water at a slow rate. It is possible to build electric water heaters that will heat water just as quickly as fuel burning heaters, but it is not economical or practical for the power station to furnish current at the rate which would be required. Hence, practically all electric water heaters are connected to a storage tank and the heater is in operation a large part of the time. Frequently thermostats are used for automatic control.

In all the tests upon electric water heaters, except those

of the instantaneous type, the storage tanks were insulated by a tank cover, consisting of an inner layer of asbestos paper, ½ inch filler of hair felt, and a canvas cover.

Radiation Losses.—Loss of heat through radiation may be a very important consideration in water heating systems. To determine such losses and to determine the comparative heat-insulation value of different materials a series of radiation tests were made upon a 30-gallon tank.

A covering of asbestos cement to a thickness of about ¾" reduces the losses 26 per cent. The range boiler tank cover, consisting of an inner lining of asbestos paper, a filling of ½" hair felt and an outer cover of canvas reduced the losses 60.7 per cent. A covering, consisting of asbestos paper and ¾" hair felt held to the top and sides of the tank by a wrapping of white muslin, reduced the losses 71 per cent, these losses may be further reduced by from 5 per cent to 10 per cent by the addition of asbestos cement on top of a tank already covered as above described. Obviously, there is also considerable loss in connection with uncovered hot water pipe. Where a return system is used it is entirely possible for the losses from the pipes to exceed those from the tank.

Conclusions.—While there is a separate problem for each home the questions in general in the selection of the water heater are: the initial cost of the heater; the cost of operation; the convenience in using the heater; the time required to heat the water, and the thermal efficiency of the heater. For purposes of comparison the following costs of fuel have been assumed:

Soft coal	$8.00 per ton
Kerosene	.15 per gal.
Gasoline	.20 per gal.
Artificial gas	1.25 per thousand
Electricity	.02 per k.w.h.

In the case of electric energy the rates vary from ½ cent to 22 cents per k.w.h., more common rates are from 5 cents and 10 cents. Only where rates of 2 cents per k.w.h. and less prevail can water heating by electricity on a large scale be considered feasible

To heat sufficient hot water for washing dishes will require the following:

Fuel	*Cost*	*Time Required*
Soft coal	$ .02	10 min.
Kerosene	.0055	30 min.
Gasoline	.0144	40 min.
Gas (circulation type heater)	.015	20 min.
Electric (3,000 watt instantaneous, at 3 cents per k.w.h.)	.01	10 min.

To heat sufficient hot water for a bath will require the following:

Fuel	*Cost*	*Time Required*
Soft coal	$ .02	20 min.
Kerosene (1 burner)	.011	1 hour
Gasoline	.022	1 hour
Gas (circulation type)	.0225	30 min.
Electric (1,500 watt circulation type, at 2 cents per k.w.h.)	.045	1 hr. 30 min.

To heat sufficient water for two baths will require the following:

Fuel	*Cost*	*Time Required*
Soft coal	$ .02	30 min.
Kerosene (1 burner)	.0193	1 hr. 45 min.
Gasoline	.032	1 hr. 45 min.
Gas (circulation type)	.03	40 min.
Electric (1,500 watt circulation heater, at 2 cts. per k.w.h.)	.08	2 hrs. 45 min.

To heat sufficient water for a washing of clothes will require the following:

Fuel	*Cost*	*Time Required*
Soft coal	$ .032	1 hour
Kerosene (1 burner)	.0383	3½ hrs.
Gasoline	.076	3½ hrs.
Gas (circulation type)	.0675	1½ hrs.
Electric (1,500 watt circulation heater, at 2 cts. per k.w.h.)	.27	9 hours

To supply hot water at the tap 24 hours a day for a family of three for general domestic purposes, bath and laundry, the following table will apply, if the range boilers are well insulated:

Fuel per month	*Quantity per month*	*Cost per month*
Soft coal ($8.00 per ton)	300 lbs.	$1.20
Kerosene (1 burner, 15c a gal.)	15¾ gal.	2.36
Gasoline (20c per gal.)	19 gal.	3.80
Gas (automatic type heater, $1.25 per 1,000 cu. ft.)	2,700 cu. ft.	3.38
Electric (circulation, immersion or direct contact type, 750 watt at 2c per k.w.h.)		7.50

It should be noted on the foregoing tabulations that in some cases it takes about as much time to heat a small quantity of water for washing dishes as it does sufficient water for a bath. The explanation of this lies in the fact that for washing dishes the water must be at a higher temperature and that when it has reached this temperature there will be a sufficient quantity (at a lower average temperature) for a bath.

Summary.—It costs from 40 cents to $1.50 a month per individual to furnish hot water (24-hour service) in the home. The amount will vary with the kind of fuel used, the local fuel rate, and the habits of the individuals.

In the cost of operation the coal heater is cheapest; the kerosene, second; gas (artificial), third; gasoline, fourth; and the electric water heater cost is the highest.

For speed in heating water the coal water heater comes first; gas, second; kerosene and gasoline, third, and the electric heater is the slowest.

In order of convenience the electric water heater is first; gas, second; kerosene and gasoline, third, and coal the least convenient.

In efficiency the electric water heater comes first; the gas, second; the kerosene, third; the gasoline, fourth, and the coal heater last.

Specification for Spar Varnish. (25b11)—(*Prepared and recommended by the U. S. Interdepartmental Committee on Paint Specification Standardization. Circular of the Bureau of Standards No.* 103. *Second edition. Size* 7" x 10". *Pages* 6.)—The varnish shall be suitable for use on both outside and inside surfaces of vessels, buildings, etc., and must be resistant to air, light and water. The manufacturer is given wide latitude in the selection of raw materials and processes of manufacture, so that he may produce a varnish of the highest quality. It must meet the following requirements:

Appearance. Clear and transparent.

Color. Not darker than a solution of 3 g. of potassium dichromate in 100 cc. of pure sulphuric acid, specific gravity 1.84.

Flash Point (Closed-cup). Not below 30 degrees C. (85 degrees F.). Non-volatile matter. Not less than 40 per cent by weight.

Set to Touch. In not more than 5 hours.

Dry Hard and Tough. In not more than 24 hours.

Working Properties. Varnish must have good brushing, flowing, covering and leveling properties.

Safety of Working. Varnish must pass the draft test.

Water Resistance. Dried film must withstand cold water for 18 hours and boiling water for 15 minutes without whitening or dulling.

Toughness. Varnish must pass a 50 per cent Kauri reduction test at 24 degrees C. (75 degrees F.).

The circular also contains a discussion of sampling, laboratory examination and basis of purchase.

Specifications for Flat Interior Lithopone, Paint, White and Light Tints. (25b22)—(*Prepared and recommended by the U. S. Interdepartmental Committee on Paint Specifications Standardization. Circular of the Bureau of Standards No.* 111.)

General.—This specification covers ready-mixed lithopone paints, frequently known as flat, washable wall paint, in white and a variety of light tints. Paints under this specification are not intended for outside exposure; they shall dry to dead flat opaque coats that will adhere well to wood, metal and plaster, stand washing with soap and water, and show no material change in color on exposure to light.

The paint shall be purchased by volume (231 cubic inches to the gallon).

(a) *Pigment.*—The pigment shall consist of:

	Maximum Per cent	*Minimum Per cent*
Lithopone	..	80
Zinc oxide	10	..
Tinting and Extending pigments	10	..
Material soluble in water	0.8	..

Note.—The lithopone used must contain not less than 26 per cent of zinc sulphide and must not darken on exposure.

(b) *Liquid.*—The liquid portion of the paint shall consist of treated drying oils or varnish, or a mixture thereof, and turpentine or volatile mineral spirits, or a mixture thereof, in such proportions as to insure not less than 25 per cent of non-volatile vehicle. The non-volatile vehicle shall dry to a tough and elastic film.

(c) *Paint.*—The paint shall be well ground, shall not settle badly, cake or thicken in the container, shall be readily broken up with a paddle to a smooth, uniform paint of brushing consistency, and shall dry within 18 hours to a dead flat finish without streaking, running or sagging and free from laps and brush marks. The color and hiding power when specified shall be equal to those of a sample mutually agreed upon by buyer and seller. After drying for not less than five days, marks made on the painted surface with a soft lead pencil (No. 2 Mogul) shall be easily removed by washing with soap and warm water without appreciably marring the paint surface. The weight per gallon shall be not less than 14½ pounds.

The paint shall consist of:

	Maximum Per cent	*Minimum Per cent*
Pigment	72	68
Liquid (containing at least 25 per cent non-volatile matters)	32	28
Water	1	..
Coarse particles and "skins" (total residue retained on No. 200 screen based on pigment)	0.5	..

The circular also contains specifications for sampling, laboratory examination, analysis of pigment and reagents.

Lighting for Indoor Recreations. (31a17)—(*Bulletin L. D.* 129, *Lighting Data, Edison Lamp Works. Size 6" x 9". Pages* 15.)—In this bulletin the following subjects are discussed: Pool and Billiard Parlors, Bowling Alleys, Indoor Tennis Courts, Squash Courts, Skating Rinks.

Bibliography: *"Electricity in Ice Skating Rinks,"* J. C. Carlsen, Electrical Review, May 12, 1912. *"Lighting a Covered Squash Racket Court,"* Illuminating Engineer (London), September, 1912. *"Illumination of Ice Skating Rink, Vancouver, N. B.,"* Electrical World, April 4, 1914. *"Standardizing the Lighting of Bowling Alleys,"* J. L. Stair, Lighting Journal, July, 1914. *"Lighting of Squash Racket Courts,"* Illuminating Engineer (London), August, 1914. *"Billiard and Pool Table Lighting,"* H. C. Meredith, Lighting Journal, February, 1916.

Lighting for Outdoor Sports. (31a11)—(*Bulletin L. D.* 126, *Lighting Data, Edison Lamp Works. Size 6" x 9". Pages* 23.)—In this bulletin the following subjects are discussed: Tennis Court Lighting, Clock and Court Golf Lighting, Lighting of Motorcycle and Bicycle Racing, Lighting of Outdoor Arenas, Lighting of Bathing Beaches, Lighting of Trap Shooting Ranges, Croquet and Roque Court Lighting.

Bibliography: *"Tennis by Night,"* Electrical Merchandising, August, 1912. *"An Electrically Lighted Tennis Court—Newton Center,"* Electrical World, August 23, 1913. *"Lighting of a Range for Night Trap Shooting,"* Clarence L. Law, Lighting Journal, May, 1914. *"Lighting Outdoor Tennis Courts with High Efficiency Lamps,"* A. L. Powell and A. B. Oday, Electrical World, June 13, 1914. *"Reduced Wattage with Overhead Lighting of a Tennis Court,"* S. L. E. Rose and C. S. Van Dyke, Electrical World, July 18, 1914. *"Artificial Lighting of Tennis Courts,"* H. T. Spaulding, Lighting Journal, May, 1915. *"Lighting the Sheepshead Bay Race Track,"* L. C. Porter, Lighting Journal, June, 1916. *"Adding Hours to Summer Days for Outdoor Recreation,"* Electrical World, June 17, 1916. *"Increasing the Usefulness of Athletic Grounds,"* L. C. Porter, Lighting Journal, August 19, 1916. *"The Lighting of Parks and Playgrounds,"* A. L. Powell and H. A. Tinson, American City, July, 1917. *"Drill Field Illumination,"* A. B. Oday, Electrical Merchandising, September, 1917. *"The Sport Alluring (Trap Shooting),"* R. E. Harrington, Dupont Magazine, May, 1919.

The Lighting of Printing Plants. (31a13)—(*Bulletin L. D.* 125, *Lighting Data, Edison Lamp Works. Size 6" x 9". Pages* 20.)—In this Bulletin the following subjects are discussed: Present Practice, General Requirements, Type Making and Composing, Photo-engraving, Press Room, Bindery.

Bibliography: *"The Illumination of Printing Works by Electricity,"* by J. Eck, Illuminating Engineer (London), April, 1912. *"Revising the Lighting of a Composing Room,"* Electrical World, February 28, 1914. *"The Lighting of Printing and Bookbinding Plants,"* by F. H. Berhard, Electrical Review, August 24, 1918. *"Planning the Printing and Publishing Building,"* by George Nordham, The American Printer, March 20, 1920.

The Lighting of Offices and Drafting Rooms. (31a8)—(*Bulletin* 35, *Engineering Department, National Lamp Works. Size 6" x 9". Pages* 26.)—In this bulletin, the subject of office lighting is discussed under five principal subdivisions: 1. Quantity of light; 2. Quality of light, choice of units; 3. Utilization of light; 4. Location and number of lighting units; 5. Illumination calculations.